An Address
ON
THE INFLUENCE OF THE BRITISH MEDICAL ASSOCIATION IN THE ESTABLISHMENT OF OPHTHALMOLOGY AS A SPECIAL SCIENCE.

DELIVERED BEFORE THE SECTION OF OPHTHALMOLOGY OF THE ANNUAL MEETING, BRIGHTON, 1913.

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GENTLEMEN,—Duty and pleasure are not always synonymous terms, but on the present occasion, in offering a welcome to the members of the Ophthalmological Section, I find them to be so.

Before entering on the business of the Section, I must express my cordial thanks to those who have placed me in the position of President. I appreciate to the full the honour thus conferred, and wish I could more adequately express my acknowledgements. Our programme of papers and subjects for discussion promises great things for the interest and success of this meeting, and instead of asking you to listen to an address on any special subject in ophthalmology I propose to dwell on the practical services rendered to ophthalmic work by the British Medical Association.

This idea was suggested by noticing that the date of the founding of the Sussex and Brighton Eye Hospital coincided with that of the founding of the Association, namely, 1832. It is certain that the methods of treatment in use in that hospital to-day, differ as greatly from those existing then as do our ordinary conditions of life. Yet, in point of time, it is not so very long ago, and there will undoubtedly be in this health resort inhabitants who were living when the foundation stone was laid. While it is difficult to think oneself back in the general surroundings of that period, it is not more so than to realize the position of medicine and surgery at that time. But we cannot estimate our indebtedness to the Association otherwise.

THE POSITION OF THE MEDICAL PROFESSION IN 1832.

Chaos is the only word which will describe the position of the profession in those days. The public had no means of distinguishing between qualified and unqualified practitioners. The grossest anomalies prevailed with regard to the licensing bodies. Graduates of English universities could practise anywhere in England, except in London and seven miles around, in Wales, in Scotland, and in Ireland, except Dublin; while, on the other hand, graduates of Irish and Scottish universities wishing to practise in England or Wales were obliged to graduate again at an English university or take the licence of the English College of Physicians. Grievances and inequalities, the evils of a rampant quackery and illegal practice, which ever evaded the arm of the law, the entire absence of uniformity in the regulations for medical study, the variety in the value of diplomas, engendered in the ranks of the profession jealousies, antipathies, and hostilities, fortunately unknown to-day.*

The medical profession was literally a "house divided against itself." The respective professions of physician, surgeon, apothecary, druggist, and chemist were all severely separate and distinct from each other.

OPHTHALMOLOGY IN THE FIRST QUARTER OF THE NINETEENTH CENTURY.

In order to realize the influence of our Association on ophthalmology it is necessary to review the records concerning the treatment of diseases of the eye prior to and at the beginning of the nineteenth century. For this we need only refer to medical authors and to the advertisement pages of the newspapers of that date. I have sought among the writings of men distinguished for their learning, whose position and reputation in the eyes of their professional brethren was unassailable.

Of these, perhaps, the best known is Sir William Lawrence, F.R.S., Surgeon-Extraordinary to the Queen. Lawrence was appointed surgeon to the London Hospital for Diseases of the Eye—now the Royal London Ophthalmic Hospital—in 1814, nine years after it was opened, and was senior surgeon to that hospital when he retired. He was, in addition, surgeon to St. Bartholomew's Hospital, and lecturer on surgery at that hospital; also surgeon to Bethlem and Bridewell Hospitals. In his introduction to his *Treatise on Diseases of the Eye*, published in 1833, he says:

> As the general body of surgeons did not understand diseases of the eye, the public naturally resorted to oculists, who, seeing such cases in greater numbers, became better acquainted with the symptoms, diagnosis, and treatment, and especially more skilful in the operative department. At the same time, the subject, being imperfectly understood, was neglected in the general surgical courses, in which many important affections of the eye were entirely unnoticed and the whole inadequately explained. Thus students who resorted to London for the completion of their medical studies had really no means of learning this important department of the profession, which was tacitly abandoned, even by the hospital surgeons, and turned over to the oculists. The latter, not being conversant with the principles derived from anatomy, physiology, and general pathology, attended merely to the organ, and relied almost exclusively on what is comparatively of little importance—local treatment. Hence ophthalmic surgery, being in a manner dismembered from the general science, was reduced to a very low ebb. Until within a few years it was, in this country at least, in a state of almost total darkness.

Our second source of information—advertisements—affords abundant confirmation of the distinguished surgeon's statement. Thus:

> Edinburgh, December 28. Professor Hillmer, Physician and Counsellor of the Court to the King of Prussia, has restored many blind people to their sight, in presence of the gentlemen of the faculty, who express their highest approbation of the great perfection to which this gentleman has brought this most noble and useful science. The charitable and honest behaviour of this worthy man and the great success his inimitable performances are attended with (far superior to anything ever before introduced into these Kingdoms) make him universally esteemed and beloved. It is very remarkable that this gentleman's operations are attended with no pain or inflammation, and none of them miscarried.—*Williamson's Liverpool Advertiser*, December, 1758.

> They write from Chester that a few days since arrived at the Talbot Inn in that city, from Bath, on his way to Dublin, the Chevalier Taylor, Ophthalmiate to his present Majesty, and their Imperial Majesties to the Kings of Holland, Denmark, Sweden, etc., to All the Electors of the Holy Empire, etc., who; after having been in every Kingdom, Province, State and City of the least consideration—in every Court—presented to every crowned Head and Sovereign Prince in all Europe without exception, is lately returned to England, with a view of establishing his residence in London.—In various parts there appears of his writings, in many languages, no less than 44 works on the Eye and its defects; the produce of greatest experience and practice so extensive, that for many years near 4,000 persons have been yearly under his care for defects of sight in different parts of the world.—At Exeter have been lately published the names and habitations of upwards of 140 persons who have been restored to sight by his aid, within these few weeks, in that city and neighbourhood.—A great number of persons affected in the eye are now attending him at Chester from various parts. And we can assure our readers, that to-morrow evening he will certainly come to the Talbot Inn in Liverpool, and will continue till Monday evening; on Tuesday evening next will return to Chester, and on Wednesday will proceed to the Head for Dublin: during his short stay, the poor as in all places shall have his best assistance without expense.—*Williamson's Liverpool Advertiser*, January 12th, 1759, p. 2, col. 3.

> Having had an extraordinary cure performed on one of my children, who was born blind, by Baron de Wenzel, Occulist to His Britannic Majesty in Pall Mall; I am induced to make the circumstances public, for the benefit of any person in the same case. The child continued blind with cataracts on both eyes till last year, when (as he was then four years old), I applied to the Baron to extract them. He performed the operation on the right eye, and had much greater success than I could have expected, as the sight is perfectly obtained; within these few days the same operation has been repeated on his left eye, which is already in so fair a way that I doubt not but a short time will make this as satisfactory a cure as the other. As many persons who may see this may be unacquainted with the nature of the operations performed by the Baron, and may wish for further information; I shall be happy to answer any

* Any one interested in recalling the situation will find it in Rivington's *Sketch of the History of the Medical Profession of the United Kingdom.*

more particular enquiries, and shall think myself fortunate if I am the means of putting any one in the way to procure relief in so valuable a part as the eye.

Signed, S. Bosanquet
(Late one of the Directors of the Bank, Forest House, Near Layton, Essex).
—*Williamson's Liverpool Advertiser*, July 22nd, 1773.

Mons. Pellier, Occulist (before his departure for London, where he intends to fix his residence), proposes to spend a short time in this town, during which the afflicted with disorders in the eyes may have recourse to him.

Mons. Pellier was here last year, when he performed many successful operations in presence of gentlemen of the Faculty, in this town. He cures Mrs. Hargreaves, seventy years of age, No. 32 Matthew Street; Mrs. Pott, wife of Mr. Pott, sugar-boiler, No. 14, in Castle Street; Robt. Christie, Musician, 23 years of age, who was blind many years; a person at No. 44 George's Street, and several others.—*Williamson's Liverpool Advertiser*, October 20th, 1785.

The skill of this oculist was vouched for by the physicians and surgeons of the Liverpool Infirmary and of the Liverpool Dispensary. Park and Alanson were two of the most notable surgeons of that day.

We, the undersigned physicians and surgeons, having seen M. Pellier operate on the cataract, and having conversed with him on the subject of his profession as an oculist, approve much of his dexterity in operating, and judge favourably of his knowledge in diseases of the eye.

Edward Alanson, Surgeon to the Liverpool Infirmary.
Henry Park, Surgeon to the Liverpool Infirmary.
R. Blundell,
J. Tetlow,
James Gerard, Physician to the Liverpool Infirmary.
T. Houlston, Physician to the Liverpool Infirmary.
J. Binns, Physician to the Liverpool Dispensary.
J. Worthington, Physician to the Liverpool Dispensary.
John Lyon, Surgeon to the Liverpool Infirmary.
—*Williamson's Liverpool Advertiser*, October 21st, 1784.

Oculists were obviously necessary, and the public preferred a man who devoted himself exclusively to diseases of the eye, treatment at this time being practically limited to external affections and cataract.

Travers, writing in 1820, remarks that "no one except the thorough surgeon can make the complete oculist"—the qualification distinguishing him (the "complete oculist"), in the writer's mind, from the "bare oculist." But he omitted to state where the complete oculist was to obtain his knowledge. Certainly not in the schools of anatomy, as a brief reference to them will disclose, and it is seen that the net result of teaching or no teaching was the same—with this difference, that the general surgeon ceased to take interest in eye work, and it was consequently left to the unqualified man (the bare oculist), who became the skilful operator.

In the year 1815 there were in England only six schools of anatomy (except those of Oxford and Cambridge). In this year the Apothecaries Act was passed. In 1828 there were twenty schools in which anatomy was taught and dissections carried on—namely, 12 in London and 8 in the provinces—at Manchester 3, Liverpool 2, Birmingham 1, Bristol 1, Sheffield 1.

Increase in the number of anatomical schools did not materially benefit the student. Though premises were now licensed, subjects for dissection were not available unless illegally obtained through the medium of the body-snatcher. Even in Edinburgh, a recognized centre, we read: "The average number of medical students in Edinburgh is 700 each session. For some years past the difficulty of procuring subjects has been so great that out of that number not more than 150 or 200 have ever attempted to dissect." Students, therefore, betook themselves to the Continental schools, where the facilities were greater, and one writer suggested "that all medical students will go abroad if an alteration is not soon made." In this condition of things the teaching of the anatomy of special organs was practically *nil*, and the distinction between the "complete oculist" and the "bare oculist" was academic.

Previous to the year 1817 no lectures were delivered in Great Britain on the diseases of the eye; a knowledge of these complaints was not presumed to form part of the education of a surgeon. Subsequently lectures were given at the Royal Westminster Ophthalmic Hospital.

The information imparted is on record. The lecturer first states that public opinion, though for the most part founded on professional authority, is generally wrong. Public opinion, he continues, pronounces the eye to be an organ of a very delicate nature, exquisitely sensible, requiring the greatest delicacy of touch and the utmost nicety of management; but students must be taught otherwise. They must learn that the eye is not a delicate organ, that it will suffer more comparative violence with less injury than any other of importance in the body—one would like to know which he considered the other important organs—and that the ablest and most successful operators are neither the most gentle nor the most tender in their proceedings.

Difficulties, he goes on, supposed to attend the performance of operations on the eye, did not exist. "Few persons can duly estimate the liberties that may be taken with the eye until they have seen several operations performed." Peculiar tact, he said, was supposed to be necessary to perform operations on the eye with advantage, "But students must not suffer themselves to be deceived, a surgeon who could operate well on any other part of the body, possesses coolness enough to operate upon an eye, the loss of which is comparatively of little consequence."

These unique sentiments are those of a "complete oculist," otherwise "surgeon," and later Fellow of the Royal Society; they were published by him for the purpose of assisting in bringing the management of diseases of the eye within the principles which regulate the practice of surgery in general. Is it wonderful that the public preferred the "bare oculist"?

Foundation of Special Hospitals.

Lack of interest in eye work is explained by lack of facilities. Prior to 1832 there were only three officially recognized special establishments for treatment of affections of the eye—the London Dispensary for Curing Diseases of the Eye and Ear (Royal London Ophthalmic Hospital), suggested October 1st, 1804, by John Cunningham Saunders, opened March 25th, 1805, but not thrown open to students till 1810; the Royal Infirmary for Diseases of the Eye, Cork Street, opened 1804; and the Westminster Ophthalmic, in 1816. Not until 1824 did an eye department exist in connexion with any of the London hospitals. The first eye infirmary in the provinces—the third established in Great Britain for treating diseases of the eye exclusively—was at Exeter in 1808, and we read that the efforts of a professional combination to prevent the formation of the West of England Infirmary for Curing Diseases of the Eye was only defeated by the founder—Mr. (later Sir William) Adams—having previously obtained the sanction and patronage of His Royal Highness the Prince Regent.

This "First Gentleman of Europe" did much for Brighton, but though we find little to admire in his life and character, we cannot quite agree with Leigh Hunt's indictment of him as a man who "had just closed half a century without one single claim on the gratitude of his country or the respect of posterity," for we remember that he performed at least this one good action during his lifetime. The special hospitals were founded in the following order:

London Dispensary for Curing Diseases of the Eye and Ear	1804
Royal Eye Infirmary (Cork Street)	1804
Exeter Eye Infirmary	1808
Bristol Eye Hospital...	1810
Bath Eye Hospital	1811
Bristol Eye Dispensary	1812
Manchester Royal Eye Hospital	1814
Westminster Ophthalmic Hospital	1816
Liverpool Institution for Curing Diseases of the Eye (June 12th)	1820
Liverpool Ophthalmic Hospital (August 20th)	1820
Plymouth Royal Eye Hospital	1821
Norfolk and Norwich Eye Infirmary... ...	1822
Northumberland, Durham, and Newcastle-on-Tyne Infirmary for Diseases of the Eye ...	1822
Edinburgh Eye Infirmary	1822
Birmingham and Midland Eye Hospital ...	1823
Glasgow Eye Infirmary	1824
Sussex and Brighton Eye Hospital	1832

The last mentioned owes its establishment to Mr. J. B. Slade, M.D., who, seeing that "an institution intended exclusively for the cure of ophthalmic diseases was much needed in this town," enlisted the help and sympathies first of his medical friend, Mr. James Pickford, and after-

wards those of their private friends and Dr. Todd. The "Infirmary" was publicly instituted on August 27th, 1832, the example of Exeter Eye Hospital being instanced—possibly the action of the Prince Regent in that case had a reflex action here. It is interesting to note that among the appointments on the staff was that of a "cupper." The Patron was his Grace the Duke of Richmond, the President the Most Noble the Marquis of Bristol.

Of the thirty-seven English counties, excluding Middlesex and Monmouth, only eight possessed eye hospitals—namely, Devonshire (one), Gloucestershire (two), Lancashire (three), Norfolk (one), Northumberland (one), Somersetshire (one), Sussex (one), Warwickshire (one). There were two for the whole of Scotland—the Edinburgh Eye Dispensary (1822) and the Glasgow Eye Infirmary (1824)—while Ireland possessed none.

Principal Ophthalmic Works prior to 1832.

A list (published in 1846) of the principal works on ophthalmic medicine and surgery published in the English language before 1832, gives the names of seven authors:

1808. J. Wardrop: *The Morbid Anatomy of the Human Eye.* First edition. Edinburgh.
1811. J. C. Saunders: *A Treatise on some Practical Points relating to the Diseases of the Eye.* First edition. London.
1814. W. Adams: *Practical Observations on Diseases of the Eye.* First edition. London.
1820. J. Vetch: *A Practical Treatise on the Diseases of the Eye.* First edition. London.
1820. B. Travers: *A Synopsis of the Diseases of the Eye and their Treatment.* First edition. London.
1822. A. Watson: *A Description of the Diseases of the Eye.* First edition. Edinburgh.
1823. G. J. Guthrie: *Lectures on the Operative Surgery of the Eye.* First edition. London.

Why *A Practical Treatise on Diseases of the Eye*, by W. Mackenzie of Glasgow, published 1830, is omitted I know not. Of journals devoted to ophthalmic work there were none.

Medical Societies prior to 1832.

Though medical societies existed both in London and in the provinces, they were not formed with the intention of uniting the profession. They were entirely local.

	Instituted.
Edinburgh Royal Medical Society	1737
Physical Society (Guy's Hospital)	1772
The Medical Society of London	1773
Middlesex Hospital Medical Society... ...	1774
Colchester Medical Society	1774
Liverpool Medical Society, "a few years prior to"	1779
Edinburgh Harveian Society	1782
Aberdeen Medico-Chirurgical Society ...	1789
Plymouth Medical Society	1794
The Abernethian Society of St. Bartholomew's Hospital	1795
Leicester Medical Book Club	1800
Royal Medical and Chirurgical Society ...	1805
Westminster Medical Society	1809
Huddersfield Medical Society	1814
The Hunterian Society	1819
Edinburgh Medico-Chirurgical Society ...	1821
Lancaster Medical Book Club	1823
St. Helens Medical Society	1826
Nottingham Medico-Chirurgical Society ...	1828
The Harveian Society	1831
York Medical Society	1832
British Medical Association	1832

The rules governing the Plymouth Medical Society are possibly not representative of all:

1. Society to consist of fifteen members only.
2. Society to meet at 7 o'clock on the Friday nearest to full moon.
3. Society to meet at members' houses in rotation.
4. Society to promote friendly intercourse and good feeling.
5. Society to circulate books on medicine.
6. Society to meet and dine every three months.
7. Every member was expected to be present at the dinner.

Dinners were evidently characteristic of the times, and much appreciated, for in 1829 it was suggested that two stomach pumps should be purchased, indicating that the dinner did not fall short of a mayoral banquet. Proposition not carried, inasmuch as every medical practitioner was expected to have a stomach pump of his own. Society accepted no excuse for absence. In 1822 membership reduced to twelve.

The British Medical Association was founded on July 19th, 1832, having for its main object the congenial union of scientific research and professional honour, and the diffusion and increase of medical knowledge in every department of science and practice.

How consistently the desire of Sir Charles Hastings has been kept in view and furthered members who possess the *Transactions* and Journals can testify. A complete set of these constitutes a medical library. Its pages are a treasury of knowledge. In the medical as in the other sciences the press is one great means of advancement. Through this mighty engine only can discoveries become extensively diffused, which affords the best security for further developments.

From its formation the Association was alive to the needs of ophthalmology.

The first volume of *Transactions* (1833) contains a full report of the Birmingham Infirmary for Diseases of the Eye, by Richard Middlemore, with special observations on: (*a*) Small-pox pustule of the cornea; (*b*) conical cornea; (*c*) quinia in strumous affections of the eye—which treatment he was the first to propose and adopt; (*d*) hydrophthalmia; (*e*) strychnia in amaurosis.

The following, signed "W. Hetling," also appears in this volume:

> . . . take leave to congratulate the members of the Association on the production of its first volume; and, also, on the facilities which the establishment of this institution will afford for the more rapid and extensive communication of medical information among the profession generally. It is hoped that the reflection of how much information has been lost, and suffered to run to waste, for want of a general dépôt, which might have afforded a durable asylum and existence to valuable facts and observations, will animate the provincial profession to see their real interest and dignity in their true light.
>
> Association and publication are the simple elements of our new-formed society, which, I trust, will, both in its infancy and future growth, be emulous of being worthy to share, in the well-earned fame of its professional predecessors in the metropolis, and that it will ever study to cultivate and extend their well-designed improvements, for the honour of the profession and the benefit of mankind.

The second volume of the *Transactions* contains full reports of the same infirmary, with critical observations on: (*a*) Disease of, or changes in, the tarsal cartilages, as connected with chronic conjunctivitis; (*b*) staphyloma; (*c*) rheumatic sclerotitis; (*d*) dislocation of the lens; (*e*) hydrophthalmia; (*f*) on the occasional effects of tumours in the eyelids.

The third volume contains an exhaustive article on pterygium (27 pages), also report of Birmingham Eye Infirmary. with observations on: (*a*) Development of the cornea; (*b*) opacity of the cornea; (*c*) staphyloma; (*d*) cataract; (*e*) amaurosis—strychnia; (*f*) inflammation of semilunar membrane.

Time will not permit any detailed inquiry; it will suffice to say that it would be difficult to find a volume in which some phase of the anatomy, physiology, pathology, or treatment of the eye does not receive attention either in the form of special articles or reviewed in the retrospective annual addresses.

The idea of forming local Branches of the Association was first mooted in 1835. In that year an Eastern Provincial Medical and Surgical Association was formed at Bury St. Edmunds for the counties of Cambridge, Norfolk, Suffolk, and Essex. The founders contemplated the possibility of amalgamation with the Provincial Medical and Surgical Association instituted at Worcester, and this project was carried through in the following year—1836—when branches were also formed at Wells, Bath, and Southampton.

The Association assumed the name British Medical Association in 1856, and from an early date there were Branches in the Colonies. The exact date of the foundation of the first colonial Branch I do not know. The official dates given in the list of members refer to formal recognition after reconstitution.

It is clear that from a very early stage of the Association the idea of local medical organizations linked into a national, and finally into an imperial, organization was present in the minds of the founders.

OPHTHALMIC JOURNALS.

We read that in 1836 "an ophthalmic journal has just been proposed by Mr. Middlemore"; but prior to 1865—apart from hospital reports—there was no English journal exclusively devoted to ophthalmology.

In the year 1865 an attempt was made to remedy this defect by the issue of the *Ophthalmic Review*, edited by J. Z. Lawrence, of London, and Thomas Windsor, of Manchester. This publication was modelled upon the well-known *Annales d'Oculistique* and the *Monatsblätter* of Zehnder. It died in infancy. Its pages indicate the cause. There were people who believed that ophthalmology, like charity, should begin at home—and stop there.

The *Transactions* and JOURNAL of the British Medical Association had been in existence thirty-five years before the general London hospitals began to open eye departments; Guy's was the one exception, establishing a department in 1824. Similar departments were opened in the following order:

King's College Hospital	1865
London Hospital (Whitechapel)	1866
St. George's Hospital	1867
St. Bartholomew's	1870
St. Thomas's ... ... about	1871
Westminster Hospital	1892
Charing Cross	1901

Unfortunately I have not the same information as to Middlesex and St. Mary's.

Up to and including the year 1866, all papers, whatever the subject, were taken in the general meeting of the Association. In this year discussions on special subjects were arranged. Vose Solomon, at the Worcester meeting (vide BRITISH MEDICAL JOURNAL, 1882, vol. ii, p. 271) of 1882, stated in his address that when the Association met at Cambridge (1864) a proposal was made, "unhappily without effect," that an address should be given on ophthalmology.

In 1867 Sections were established in four subjects—Medicine, Surgery, Midwifery, and physiology. Thereafter, papers on the eye were read in the Surgical Section. Ten years later (1877) the number of Sections was six—namely, Medicine, Surgery, Obstetric Medicine, Public Medicine, Physiology, and Psychology.

Wheelhouse, of Leeds, in his review of the progress of surgery, delivered at the Bath annual meeting, in 1878, while strongly condemning specialities in surgery, made a notable exception in the case of ophthalmic surgery. His words were:

> I am in no sense a specialist; indeed, desirous as I am to record my opinion that specialities in surgery are distinctly disadvantageous, I yet feel bound to exempt ophthalmic surgery altogether from such condemnation; the field is so large, the tissues involved are so numerous, the operative procedures required so delicate in their character, that it is well, in my judgement, that ophthalmic surgery has been erected into a special science; and with the acknowledgement to those in my audience who have elected to devote themselves to the study of this branch of surgery, that, in no portion of the whole field of our art, has greater activity been shown, or greater advance been made, I will dismiss the subject.

In these words we find endorsement of the wisdom of the ancients (in Persia and Egypt) in requiring that oculists should be a separate class and ophthalmology a special science.

The objection of British surgeons to recognize specialism, so openly and strongly expressed in the first quarter of the nineteenth century, was at last breaking down. But the subject was not dismissed. While the benefit to medical science, to the profession, and to the public, of this now established custom was admitted, simple recognition of the need was not sufficient. Education of the student in the groundwork of ophthalmology was essential. In large towns the services of skilled eye men could always be obtained, but in small towns and in the country this was not so, the practitioners, otherwise skilful, not having had any teaching in ophthalmic work.

Upon recognition of this fact, it followed that practical means should be taken to meet the necessity. It was considered by the Editor of the BRITISH MEDICAL JOURNAL that the best remedy would be to make a three months' course of lectures upon ophthalmic surgery, with three months' attendance at an ophthalmic clinic, compulsory by the licensing bodies (BRITISH MEDICAL JOURNAL, 1878, vol. ii, p. 963).

At a General Council meeting, March 26th, 1879, Mr. Teale presented a memorial, signed by twenty-two of the leading ophthalmic surgeons in London, in which they drew attention to the advisability of making it compulsory upon all medical students to attend a three months' course of practical ophthalmology, either at the special eye department of a general hospital or at a special ophthalmic hospital, as well as a course of twenty lectures on ophthalmology at the least; and to the importance of making ophthalmology form a distinct subject of examination at the Pass examination for surgical diploma or at the examination of a conjoint board* (BRITISH MEDICAL JOURNAL, 1879, vol. i, p. 522).

At this time the only diploma in the United Kingdom for which a certificate of attendance upon ophthalmic surgery was required was that of Bachelor in Surgery of Trinity College, Dublin.

It logically followed that a special science deserved a special section, and in the following year (1879) at the Annual Meeting held at Cork, a *subsection*—Ophthalmology and Otology—of the Surgical Section was for the first time accordingly formed. Mr. Jonathan Hutchinson was chairman, and H. R. Swanzy, Dublin, and E. Nettleship, London, were secretaries. Discussions on the following set subjects were arranged:

Treatment of glaucoma, by H. Power.
Examination for colour blindness, H. R. Swanzy and Professor Hermann Cohn, of Breslau.
Use of eserine, pilocarpin, etc., Macnaughton-Jones.
Treatment of detached retina, Shadford Walker.
Tobacco and alcoholic amblyopia, Hirschberg, Berlin.
Diphtheritic ophthalmia, Nettleship.

In addition, no fewer than eleven other papers on diseases of the eye were promised.

The success of this new departure was so pronounced that a resolution was passed by the ophthalmic surgeons urging the desirability of an annual Ophthalmic Section. In December, 1879, the formation of such a Section was determined upon by the Council of the British Medical Association.

In the early part of 1880 (February) the formation of an Ophthalmological Society was suggested. While it cannot be definitely stated that this society owed its origin to the impetus given to ophthalmic work, by the action of the British Medical Association in forming a special Section, by the unqualified success which attended the work of the Section, and by the unanimous request of the ophthalmic surgeons present for the establishment of an annual Ophthalmic Section, it is a coincidence that five of the most prominent members of the 1879 meeting (Cork) were members of the first council of the new society.

Personally, I am inclined to look a little further back, and find the motive power in the notable speech delivered by Mr. Wheelhouse, at Bath, on August 8th, 1878.

In 1880, the annual meeting took place at Cambridge, and for the first time a special Section in Ophthalmology was formed. The first President was Mr. W. Bowman; Vice-Presidents, Mr. Henry Power and Mr. H. R. Swanzy; Secretaries, Dr. W. A. Brailey and Dr. David Little (BRITISH MEDICAL JOURNAL, 1880, vol. ii, p. 228). The subjects for discussion were (1) the nature of glaucoma, (2) toxic amaurosis, especially in relation to colour perception. In addition, the number of papers promised was thirty-six. Prior to the formation of the subsection in 1879, the number was five or six.

An analysis of the personnel of the British Medical Association Ophthalmological Section is not without interest, for it shows that all were members of the first Council of the Ophthalmological Society. Of 22 members of the first Council of the Ophthalmological Society 14 took an active part in the work of the Section, 12 of them reading papers. Mr. William Bowman was the President of both.

This is the third meeting of the Association in Brighton. The first was in 1851, a year memorable for the discovery of the ophthalmoscope, and for the removal of an eye for injury.

*The licensing bodies on being consulted replied almost unanimously "that it would not be desirable either to require attendance on a special course of lectures on ophthalmology, or to make ophthalmic surgery a distinct subject of examination" (BRITISH MEDICAL JOURNAL, 1880, vol. ii).

In 1886 the second meeting took place. The year is memorable for the discovery of cocaine. I remember the meeting well, it being the first I had visited; and it is sad to think that one half of the members who took an active part in the work of the Section, are dead, including my old friend of Moorfield's days—A. H. Benson, of Dublin.

In two respects at least, points of similarity may be noted between the last and the present meeting. That meeting clashed with the Heidelberg Ophthalmological Congress, while the forthcoming International Medical Congress in London deprives us of the pleasure of seeing many colleagues.

Of the topics for discussion on this occasion, two were dealt with in 1886—one under the heading, "What is the best method of dealing with a lost eye?" the other being, "The use of styles in the treatment of epiphora."

Such is a slight sketch of the records of our Association with regard to our particular branch of the profession up to about the time of the last annual meeting here. What has been done in and for ophthalmology during the last twenty years will be within the knowledge of all members present.

If I interpret these records correctly, it is obvious that the Association has, through the medium of its annual meetings and its weekly JOURNAL, ever at hand, done great service to ophthalmology, and it is right that honour should be given where honour is due.

I have always felt that the Association has never yet had the credit due to it for the stimulus it has afforded to the study of clinical and scientific medicine, and I am glad to have this opportunity of acknowledging my personal indebtedness.

Almost every privilege which our branch of the profession possesses to-day is due to the British Medical Association, and every member should be a loyal and active supporter of it.

THE Royal Victoria Infirmary, Newcastle, is the recipient under the will of the late Dr. John George Fenwick of a bequest of £50,000, in addition to a legacy of £1,000. The testator, who was formerly a partner in a private bank operating in Newcastle, directed that while the small sum could be used for general purposes, the larger, which was to be paid to the institution duty free, should be held in trust as an endowment fund. The hospital has 430 beds, its annual expenditure being about £37,000 a year.

A STATISTICAL return (*Feeble-minded Persons under the Poor Law*, H.M. Stationery Office, 307, price 2½d.) relating to all persons in England and Wales who on July 20th, 1912, were in receipt of one or other form of Poor Law relief, and who were deemed to be mentally defective but had not been certified as insane, has recently been presented to the House of Commons. The total number was 31,824 persons, of whom 2,340 were children. Over 33 per cent. of the adults were aged 60 and upwards, and over 57 per cent. were women; of the latter nearly 60 per cent. were single women without children, while the ratio of single women with children to the total number of women was 7.5 per cent. Taking the whole number of defectives, about 24 per cent. were in receipt of outdoor relief, but in the case of the children, all but about 10 per cent. were being maintained in institutions. The figures show that the Poor Law medical officers concerned classified the mental capacity of these defectives as follows: 2.3 per cent. as moral imbeciles, 5.5 per cent. as idiots, 15.4 per cent. as ordinary imbeciles, 44.5 per cent. as feeble-minded, and 32.3 per cent. as mentally infirm. When the figures relating to those under the age of 60 are compared with those obtained by the Local Government Board in 1905, and by the Royal Commission on the Care and Control of the Feeble-minded in 1906, there would appear to have been a large increase in the intervening years, but the compiler of the return is of opinion that this is not really the case, the apparent increase being largely due to the wider scope of the subheads under which information was sought on the present occasion. These subheads were those employed and defined in Clause 17 (2) of the Mental Deficiency Bill as introduced in 1912. In the Mental Deficiency Bill of the current year the definitions are somewhat modified, and the classification excludes mentally infirm persons, that is to say, "persons who through mental infirmity arising from age or the decay of their faculties are incapable of managing themselves or their affairs." These are the main points brought out by the return, the greater part of which is devoted to tables showing the precise distribution of defectives throughout the country.

THE SCIENCE COMMITTEE OF THE British Medical Association.

ON THE GENERAL TOXIC EFFECT OF HEAVY METALS AFTER SUBCUTANEOUS INJECTION,

AND ON

*THE QUESTION OF POISONING BY VOLATILE EMANATIONS FROM PAINTS.**

BY

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ALTHOUGH it is well known that most of the heavy metals possess closely similar effects when so administered that they reach the general circulation, no systematic attempts to define more accurately comparative lethal doses, sites of action, and paths of elimination made by the same observers experimenting comparatively with several of these metals have, so far as we are aware, been carried out. This task we have undertaken upon different species of animals, and using varying doses of copper, zinc, silver, tin, arsenic, and lead.

Our attention was first attracted to the subject by the relative ease with which trypanosomes can be driven out of the general circulation by the organic arsenical compound, atoxyl; while in other animals of a larger type, such as the dog, the donkey, and large draught animals, as also in the human subject, it is much more difficult to produce this effect, and the permanent removal of certain species of trypanosomes is almost impossible in such types of animals, as is shown by the work of Moore, Todd and Nierenstein,[1] and many other observers.

The reason for this remarkable result, so unfortunate in regard to the practical treatment of trypanosomiasis in man and higher animals by arsenic and antimony, is to be found in the site of attack upon the tissues of the higher animals which are acting as hosts by the heavy metal during the process of excretion.

The immediate effect of the drug upon the parasites depends upon the concentration which can be safely reached in the blood of the host without causing death. On the other hand, the safe limit which can be reached with the host depends on the concentration which can be borne by that type of cells in the body where the drug is adsorbed and accumulated in the process of excretion. These two concentrations do not run parallel in different types of animals, and it is for this reason that the dosage of atoxyl, and, indeed, of any heavy metal, does not vary as the weight of the animal, and hence a concentration of drug sufficient to kill and completely destroy the parasite so that it never reappears can be attained in a rat when it is impossible in a dog or a man.

Experimental observation after a large dose of an inorganic salt of a heavy metal given hypodermically in dilute solution, as also similar investigation after administration of an organic arsenical compound such as atoxyl, demonstrates that the chief site of attack is the intestinal mucosa where there is enormous congestion, and often haemorrhagic patches, or actual haemorrhages into the intestine.

Since the drug by such a method of administration is not brought in high concentration in contact with the intestinal cells, as might be supposed to be the case when it is administered by the mouth, it becomes probable that the drug concentrates there in process of excretion by the

*The expenses of this research have been defrayed by a grant from the British Medical Association.

intestine, and this we have demonstrated to be the case by finding the heavy metal in the intestinal contents and faeces, and showing its presence microchemically in the intestinal mucosa.

The lethal dose of any heavy metal given so as to reach the circulation, and the limits of its safe administration as a drug, hence depend on a surface—namely, that of the intestinal mucosa—while the effect on a blood parasite depends upon a volume or weight—namely, that of the blood plasma and tissue fluids. This illustrates the fact that larger doses relatively to body weight can be given to smaller animals, and hence the more successful results of medication. This is demonstrated more fully in the case of one particular heavy metal—copper—in the experiments recorded below on animal species of widely differing sizes.

There has also to be taken into account in considering the action and dosage of heavy metals the relative development of the intestinal mucosa. In the carnivora, such as cats and dogs, heavy metals are far more toxic proportionately than in herbivora, because of the very short intestine of the carnivora, in which the heavy metal accumulates and so causes fatal results in the process of elimination. For this reason it is impossible to treat trypanosomiasis in the dog by atoxyl or any other form of arsenical treatment.

If comparisons be made between animals of different sizes but of approximately equal intestinal development, then it is found, as shown below, that the minimal lethal dose is not proportional to the body weight, but is much more nearly proportional to the two-thirds power of the relative weights—that is, the dosage is proportional to surface, the actual surface here concerned being the intestinal surface.

Of course, strict proportionality is not to be expected, for there do not exist classes of animals with absolutely relative intestinal development, but the agreement in the case of these drugs lies much nearer to relative surfaces than to relative volumes or body weights.

In the course of our investigations our attention was later especially directed to the supposed poisoning in the case of lead paints by volatile emanations produced by interaction of the lead pigment with the oils and turpentine, and these are described below after the general account of the comparative toxicity of the different heavy metals used.

A. The Toxic Action, Excretion, and Comparative Lethal Doses of Certain Heavy Metals.

The results recorded in this section ought to be carefully distinguished, on the one hand from the marked astringent and corrosive action obtained by local application externally to cut or abraded surface, or that occurring on contact with mucous surfaces as in the excessively acute corrosive poisoning obtained when large quantities of the salts are swallowed, and, on the other hand, from the very chronic effects obtained when minute amounts of certain heavy metals, such as lead, mercury, and arsenic, are given, or accidentally taken up daily, over a prolonged period.

They are effects obtained with small but still lethal doses so gradnated as to produce death in a period varying between twenty-four and forty-eight hours, and in this case the poisoning is caused by specific or selective adsorption and local concentration from a very high dilution in the blood upon certain definite tissues, but the rate of uptake is much more rapid here than in chronic poisoning with minute doses. As a result the symptoms obtained vary, and there is more action upon the excretory organs and less comparatively upon the nervous system. In all cases with such doses as we have employed death has apparently arisen from action upon the intestinal tract leading to shock, and not to direct action upon nerve centres in brain or cord. In all the cases tested excretion of the metal took place in both small and large intestine.

The tremors, epileptiform convulsions, and central paralysis, described as a prominent feature of poisoning by heavy metals in so many textbooks, were not prominent in our experiments; occasionally tremors were observed after arsenic or silver, but not constantly, and in the cases of the other metals they were never seen.

Also we have missed the slow development of symptoms described as not occurring for several days. When the single dose given was sublethal and did not produce an effect within the first forty-eight hours, very little action of any kind was observed subsequently. While this excludes slow development from a single dose, it does not, of course, concern the cumulative effects of repeated small doses as seen typically in lead poisoning.

On account of the coagulant action of the salts of the heavy metals upon proteins, it is essential to make the subcutaneous injections in very dilute solution in sterilized normal saline, or in water in cases, such as silver, where saline acts as a precipitant. Neglect of this precaution leads to strong local action and coagulation which prevents the drug being absorbed, so that quite wrong results as to minimal lethal dose may be obtained, and a more concentrated solution much exceeding the true minimal lethal dose may be administered without producing any general effect. Under such conditions the drug becomes adsorbed locally in coagulation with protein, and later is encapsuled with connective tissue, and finally shed off as a foreign body. But at sufficient dilution the heavy metals, given subcutaneously, are absorbed, and with a sublethal dose, examination some days later, shows no local injury at the site of injection.

The experiments, taken as a whole, show clearly that the heavy metals as a class possess one common toxicological character which preponderates over all others—namely, marked irritation, congestion, and destruction of the intestinal mucosa, caused by local accumulation and excretion, via the intestine, of the heavy ions. This effect is almost identical in character with that caused by the large class of the saponins or sapoglucosides, and it is remarkable that this latter class also are not absorbed when taken by the mouth, so that many times the lethal dose, as shown by subcutaneous injection, may be swallowed without any observable effect whatever.

In both these sets of cases there is no attack on the mucosa caused by bringing concentrated drug in contact with its intestinal surface, but rather a specific affinity exists of drug and of tissue-cell of the intestine for each other, which brings the two together when the protection of the non-absorbent properties of the intestinal columnar cell are removed, and the selective concentration, for purposes of excretion, damages the excretory organ. The parallel between duodenal ulcers due probably to excretion of toxic organic bodies after extensive skin lesions, and the possibility that gastric ulcers due to gastro-toxins, as demonstrated by Bolton, may arise in a similar manner from local and specific concentration of toxic substances in process of excretion may here be mentioned.

It was clearly shown by the late Dr. O. T. Williams that there is a marked excretion of fatty acids and soaps, chiefly calcium soaps, by the intestine, and experiments now in progress by Dr. C. O. Jones in this laboratory show that after subcutaneous injection of calcium salts there is a remarkable output of calcium by the intestinal mucosa far exceeding the actual amount injected. All these experiments go towards showing that for a very wide range of substances the activity of the intestine as an excretory organ exceeds that of the kidneys in many cases.

In these manifold excretory processes carried out by the intestinal mucosa, it is noteworthy that it is just those bodies to which the intestinal cell refuses admission when administered by the mouth, such as ions of heavy metals, sapoglucosides, and calcium ions, that it excretes when they are presented in the other direction from the blood stream, illustrating a most important law of directive action of the living cell in diffusion. Not only is this so, when presented in the direction in which they do pass these substances are all selectively accumulated by the cell to its own destruction, in the process of passing them out into the intestine, although passage in the opposite direction is actively resisted.

All the heavy metals we have examined are excreted after subcutaneous injection by the intestine, and in cases of chronic poisoning, retention and strengthening of this intestinal function is most desirable in addition to that of the kidney.

General Effects.

The following effects are those caused by injection under the skin of the back of a guinea-pig of 5 c.cm. of sterilized normal saline, or water, containing in solution

such a dose of a salt of a heavy metal as will cause death in a period of about thirty-six hours (or between twenty-four and forty-eight hours). This convention was adopted in order to make the results with different metals more strictly comparable with one another.

The animal soon after the injection settles down, resumes feeding, and is apparently normal for a period varying from six to twenty-four hours. It then becomes somewhat restless and does not eat; next diarrhoea sets in, and in the case of tin, zinc, and copper there is usually blood in the discharge. In the case of arsenic only, blood was also found in the urine. The animal now becomes progressively weaker and the temperature drops, pulse and respiration both increase in frequency, and finally coma sets in leading to death.

The experiments were, as far as possible, so timed that an immediate *post-mortem* examination could be carried out, and it was often found that the heart was still contracting after all respiration had ceased. The chief findings of the examination were congestion of the lower half of the small intestine, and often haemorrhage and ulcers. Blood was present in the intestinal contents in some cases. Other organs were apparently normal, save in the case of arsenic, where renal haemorrhage and haematuria were generally found. In intestinal contents and intestine the metal administered was readily demonstrable by the usual tests. In the case of copper, silver, and lead the element was also found in the tissues of the kidney.

In the following protocols one typical instance is given for each heavy metal, followed by a statement of the number of experiments made in order to substantiate the results for each element.

Copper.

A guinea-pig, weight 320 grams, was given 0.02 gram of crystallized copper sulphate ($CuSO_4$, $5H_2O$), representing 5 mg. of copper, or 1 part in 64,000 of body weight. The injection was given dissolved in 5 c.cm. of sterilized saline under the skin of the dorsal region.

For the first twenty-four hours the animal ate and behaved quite normally. At twenty-eight hours diarrhoea set in, and increased in amount gradually till thirty-three hours. Some motor paralysis then set in, especially in hind limbs, but reflexes were present. At thirty-four hours the animal was in a comatose state, and respirations ceased at thirty-five hours after the injection, and the conjunctival reflex had disappeared.

An immediate examination showed the heart still beating. The lower half of the intestine was very congested and the intestinal contents were blood-stained. Testing with potassium ferrocyanide demonstrated copper in the intestinal contents. Sections of the intestine were prepared and cut, and these showed in the ileum—capillary haemorrhages in the submucosa, ulceration of the epithelium, and a general inflammatory condition of the mucosa and submucosa. The sections of the other tissues—namely, stomach, kidney, lung, and liver—presented a normal appearance.

The experiments with copper salts were made on 22 guinea-pigs, 15 rats, and 11 mice. In all cases with a moderately low lethal dose the changes observed were similar, but where the dose was sufficient to cause death within two hours no tissue changes were discoverable.

Zinc.

The salt used here was zinc sulphate ($ZnSO_47H_2O$). A guinea-pig weighing 340 grams was given 0.2 gram of the zinc salt, or 46 mg. of zinc, corresponding to 1 part in 7,392 parts of body weight, dissolved in 5 c.cm. of normal saline.

Observed twenty-four hours after the injection, the animal was apparently normal. Three hours later diarrhoea had appeared, there was a slight amount of motor paralysis in hind limbs, but reflexes were present. Thirty hours from the commencement, the diarrhoea was increased and the motions were blood-stained. At thirty-five hours the diarrhoea had ceased, and the animal was walking about again. At thirty-seven hours lethargy was marked and respiration spasmodic. At thirty-nine hours there was coma, and the animal died about forty hours from the commencement.

An examination was made at once. The auricles were found still beating, ascites present, congestion of ileum and caecum, and obvious haemorrhages in the latter, some being over 1 cm. in diameter. The other organs were apparently normal.

Microscopical Examination.—The ileum shows mucous and submucous congestion, and small round-celled infiltration. In the caecum there are ulcers with raised edges and inflammatory surrounding zones. The stomach, duodenum, jejunum, colon, rectum, kidney, and liver yielded normal sections.

The evidence was substantiated in 9 guinea-pigs and 5 mice.

The diarrhoea was not a constant occurrence with this metal, being found in 9 only out of the 14 cases—namely, in 7 of the guinea-pigs and 2 of the mice.

Tin.

The chloride ($SnCl_2$) was the salt used. A dose of 0.17 gram, equivalent to 107 mg. of tin, was given in 5 c.cm. of normal saline to a guinea-pig weighing 420 grams, being approximately 1 in 4,000 of body weight.

Observed thirty-two hours after injection the animal was apparently normal. At forty hours low temperature and rapid respiration. At forty-five hours the animal was very lethargic. At forty-six hours it was comatose, and in a few minutes all respiration had ceased.

Examined at once, the heart was still contracting. The chief factors were congestion of ileum and large intestine and blood in the intestinal contents. The other organs were apparently normal.

Microscopical Examination.—Similar appearances as with other heavy metals in the mucous and submucous coats of ileum and colon; other organs normal.

The determinations for tin were made on three guinea-pigs and two rats; all five animals showed similar symptoms and *post-mortem* changes.

Lead.

The salt used was the acetate ($Pb(C_2H_3O_2)_2\ 3H_2O$); of this salt 0.9 gram dissolved in 5 c.cm. of sterile water, equivalent to 490 mg. of lead. The weight of the animal was 420 grams, so this dose corresponds approximately to 1 part in 1,000 of body weight.

Symptoms commenced twelve hours after injection, and at fourteen hours diarrhoea began. At eighteen hours there was slight diarrhoea, lethargy, and a subnormal temperature; this continued till the twenty-third hour, when the animal became comatose and died at twenty-four hours after the injection.

Immediate examination showed the auricles just contracting, the small intestine congested, no blood in intestinal contents, congestion of kidneys, other organs normal. A trace of lead was found in the urine obtained from the bladder.

Microscopical Examination.—The kidneys showed marked glomerular congestion, the small intestine some congestion of mucous membrane of villi. The large intestine showed mucous and submucous congestion.

Lead was given, for confirmation, in three rats and two mice, and no contradictory evidence to the above was obtained.

Silver.

The nitrate of silver was used for the injections; of this salt, 0.02 gram, dissolved as usual in 5 c.cm. of distilled water and equivalent to 13 mg. of silver, was injected subcutaneously in a guinea-pig weighing 320 grams. This constitutes a dosage of only 1 part in 24,000 parts of body weight; yet, introduced subcutaneously, this was found to give a lethal result within twenty-six hours.

Six hours after injection the animal still appeared normal; in the period from the seventh till the twelfth hour the animal was lethargic. At twenty-two hours there was lethargy and diarrhoea. At the expiration of the twenty-third hour the diarrhoea had ceased, but the lethargy was increased. At twenty-four hours the breathing was dyspnoeic, and some clonic convulsions were observed. At twenty-five hours the animal was comatose. Death occurred at the end of twenty-five and a half hours.

Immediate examination showed the heart at rest. There was the usual congestion of the large intestine and also of the kidneys. The other organs were normal, no increase of bronchial secretion.

Microscopical Examination.—In the large intestine there was small round-celled infiltration of the mucosa, and, in the kidney, glomerular congestion. The liver cells were pale in colour and stained badly, presenting an appearance of granular degeneration.

Confirmatory results to the above findings were obtained in three guinea-pigs and three rats.

Arsenic.

The salt employed was sodium arseniate (Na_2HAsO_4, $7H_2O$); a dose of 0.02 gram of this salt, corresponding approximately to 5 mg. of arsenic, was given in 5 c.cm. of normal saline to a guinea-pig weighing 400 grams. This represents a dosage of 1 part in 80,000 of body weight.

After the lapse of twenty-six hours from the injection, the animal was still apparently normal. The first sign of action was spasmodic shivering at the twenty-seventh hour, which became more marked later. At thirty-five hours the movements became somewhat ataxic, and the animal was lethargic. At the forty-fifth hour there were occasional convulsive movements, apparently respiratory in origin, and the animal died at the forty-seventh hour.

Immediate autopsy revealed the heart still beating feebly. There was marked congestion of the kidneys, blood in the urine contained in the bladder; congestion of the small intestine; other organs apparently normal.

Microscopic Examination.—The kidney sections showed marked cortical haemorrhages, both from glomerular and other capillaries. The uriniferous tubules and pelvis contained blood, but there was no apparent lesion of the tubules. The small intestine showed, in sections of the ileum, marked congestion of the mucous membrane of the villi. The other organs gave normal appearances in the sections.

The results were confirmed in seven guinea-pigs, two rats, and six mice.

It will be observed that while arsenic gives the universal picture of the heavy metal group in the intestinal area, it shows a more violent effect upon the kidney vessels.

B. Determination of Relative Dosages in Animals of different Species and Size.

Since the heavy metals are selectively picked out by the intestinal mucosa as shown above, experiments were now conducted to follow this effect somewhat quantitatively in animals of a different size, so as to correlate dosage either to body weight or intestinal area, as the case might be. If the dosage follows body weight, it should be proportional in animals of widely different size to the weight, but if it is proportional to intestinal area, it should be proportional to the two-thirds power of the weight. For, if proportional development may be assumed, the body surface or that of any portion (such as the intestinal area) will be proportional to the square of a linear dimension such as length, and weight will be proportional to the cube of linear dimensions. It follows that surfaces and weight between themselves will stand to each other so that surface is proportional to the two-thirds power of weight.

It was impossible to carry out such a large series of experiments as would settle this for all heavy metals, and so it was determined to carry out the estimations more exhaustively for one metal only, and for this purpose copper was selected.

Two species of animal of similar degree of intestinal development were selected in the guinea-pig and mouse, which also at the same time gave a wide difference in body weight. The lethal dose was chosen as that which gave a fatal result in a time interval lying between twenty-four and forty-eight hours. The copper was always prepared by making various large dilutions with normal saline from a standard 20 per cent. solution, so that the determined dose was invariably given in a volume of 5 c.cm., and subcutaneous injection was always made under the skin of the back.

It is only by taking a fair number of animals that the minimal lethal dose can be determined with the greater accuracy necessary for a quantitative comparison in animals of different size.

A group of three guinea-pigs was taken. A was given 0.25 gram of copper as sulphate, B had 0.05 gram, and C 0.025 gram. The first died in five minutes, showing no lesions in kidney or intestines; B died in three hours, kidney and intestines showing no effect; C died in fourteen hours, marked intestinal lesions. The range of the lethal dose having been approximately determined in this manner, a dozen guinea-pigs were selected as nearly equal in weight as possible and given doses of the copper salt varying within narrower limits, and the times were noted as shown in the following table:

Guinea-pig.

	Weight in Grams.	Dose in Milligrams.	Lethal Period in Hours.
1	300	25	23
2	280	25	12
3	295	25	15
4	300	12.5	12
5	300	5	24
6	305	5	27
7	300	5	24
8	305	3	37
9	310	2.5	34
10	250	2.5	55
11	302	2.5	47
12	305	2.5	38

The minimal lethal dose in the given interval of time being so settled as closely as possible at 2.5 mg. for a guinea-pig of 300 grams, or at 1 part in 120,000 of body weight, a group of 7 guinea-pigs averaging 320 grams in weight was taken, and each member was given 2.5 mg. of copper. Five died in the intervals to be mentioned, and the others recovered and lived for sixteen days, when they were killed and showed normal intestines. Of the 5 which succumbed to this very small dose, 1 died in twenty-six hours, 1 in twenty-nine hours, 1 in thirty-eight hours, 1 in forty-six hours, and 1 in fifty-three hours. All those which died showed the typical lesions of the intestine described in the previous section. The minimal lethal dose for 300 grams of guinea-pig may accordingly be set down as 2.5 mg. of copper.

A group of white mice was next taken, the average weight of which was 12 grams, and these were dosed as indicated in the following table:

White Mouse.

	Weight in Grams.	Dose in Milligrams.	Lethal Period in Hours.
1	12	1.25	10
2	10	1.00	12
3	13	0.75	19
4	15	0.50	23
5	14	0.25	43
6	16	0.25	38
7	13	0.25	(One week)
8	11	0.25	29

The minimal lethal dose for 12 grams of white mouse can accordingly be placed at 0.25 mg.

These experiments provide two definite data upon which to base calculations—namely, for a 300-gram guinea-pig a minimal lethal dose of 2.5 mg., for a 12 gram white mouse 0.25 mg. The weights are as 25 : 1 and the doses as 10 : 1, or on the ratio of body weights the white mouse is 2.5 times more resistant than the guinea-pig. The value of such a finding is important in shedding light on the atoxyl treatment as mentioned in the opening of the paper. There would be such a ratio in the case of a rat and a human being affected with a trypanosomiasis and on treatment with atoxyl—also a heavy metal drug—there would be probably five times the factor of safety in the rat that there would be in the man to therapeutic treatment. Hence the ease of eradicating the parasite in the rat as compared with the member of the larger type of animal.

Coming now to the question of proportionality to surface, the relative weights are as 25 : 1, and the relative surfaces, other things being equal, will be the two-thirds power of this ratio; reference to a table of logarithms gives this ratio as 8.55.

The result is that the guinea-pig of 300 grams has approximately 8.5 times the intestinal area of the white mouse of 12 grams, and the dosage it can stand is found experimentally to be ten times as much.

The proportionality of dosage accordingly lies much nearer to surface than to body weight. It has, of course, been assumed that the relative development of intestine is the same in both species, so a close agreement is not to be expected.

C. Supposed Volatile Lead Compounds Formed in the Drying of Lead Paints.

Paints in the process of drying give out smells which are more or less obnoxious in varying degrees to different persons, and the question has recently been much discussed, both in this country and abroad, as to whether the volatile product indicated by the smell may contain traces of volatile lead compounds, or, failing this, whether some of the injurious effects produced in painters and others may, in certain cases, be due to poisonous volatile compounds other than lead. The symptoms in milder cases are so complex and variable that they might well arise from inhalation of other poisonous ingredients of paint than lead, and there seems little doubt that in some cases the mischief may arise in this way, although in typical cases lead is undoubtedly the active agent.

It would appear impossible to dispense with the use of lead pigments in paints on account of their excellent qualities, and the practical problem of sanitation and prevention accordingly becomes one of studying the

channels by which the mischief may arise, so as to frame appropriate regulations for minimizing the evil. The subject has in the past been more often made the ground of dispute between supporters of rival metallic oxide pigments than of scientific observation. It is to be remembered that once they reach the system, as shown in the above experiments, all these heavy metals are poisonous, and in this respect both zinc and lead, the rival pigments, are included. Also, the mode of action is the same.

In the report of a Commission of Public Hygiene made to the French Chamber of Deputies in 1907, it is claimed by Breton that traces of volatile lead compounds are carried away from surfaces painted with white lead paint in the process of drying, and in the same report Trillat and Marie describe experiments to show that moulds and bacteria exposed to emanations from a mixture of basic carbonate of lead (white lead) and linseed oil are killed and kept from growing. Breton also claimed to have killed a guinea-pig by exposure in a respiratory chamber to air aspirated through a vessel containing a mixture of white lead, linseed oil, and turpentine.

In this country Goadby[2] failed to obtain any action on organisms exposed to any possible emanations from white lead alone, but found that the emanations from painted surfaces, coated with mixtures containing turpentine as technically used, always infected guinea-pigs injuriously, whether the pigment in the paint was white lead, zinc white, or lithopone (a mixture of zinc sulphate and barium sulphate).

That emanations are given off from mixtures of white or red lead, or manganese dioxide mixed with linseed oil, especially when heated, has recently been clearly shown by Baly[3] by an ingenious application of a spectroscopic method. Baly was at first inclined to regard this as evidence of volatile lead compounds, but more exhaustive experiments proved that no lead compound was present, and in his more recent work this experimenter has shown that the emanations are aldehydic in character. The condensed emanation from prolonged aspiration over surfaces freshly painted with mixtures of white lead and oil did not produce lethal or even toxic results when subcutaneously injected into an animal, but had a nauseating odour, and, in the case of the experimenter himself, inhalation of this appeared to produce headache, nausea, and diarrhoea. It has carefully to be remembered here, however, as well as in the case of Goadby's experiments mentioned above, that this is a most exaggerated treatment with concentrated vapours, and it is almost impossible for such conditions, or anything approaching them, to arise in practice, except, perhaps, in the case of most susceptible subjects possessing a marked idiosyncrasy for these aldehydes and for turpentine emanations.

Moreover, turpentine in contact with all the pigments produces these symptoms, according to Goadby, and it is quite impossible in the operations of painting to avoid turpentine, or similar volatile dryers, which will produce the aldehydic vapours.

Armstrong[4] in a recent paper shows by a simple test, namely, the blackening of the leaf of *Aucuba japonica*, or spotted Japanese laurel, that such volatile bodies come off either from mixtures of lead pigment and oil only, or of these with turpentine more readily, or from turpentine vapour alone. The volatile bodies enter the stomata of the leaf and activate an enzyme which hydrolyzes a glucoside present in this plant, setting free thereby a black-coloured substance which acts as an indicator. Armstrong conclusively proves that the traces of lead previously claimed to have been found by other observers, as mentioned above, are really due to mechanical carrying away of minute traces of lead, and that no volatile lead compound is formed under the conditions of actual painting, or from any mixture of lead with the other ingredients of paint.

Now it is well known that in sufficient dosage the vapours of turpentine, or oxidation products formed from them, are poisonous; but the question still remains, Has this anything to do with real or supposed lead or paint poisoning, and is there any real danger to health in exposure to a considerable amount of odour of fresh paint, and are painters liable to be predisposed to lead poisoning by exposure at their work to such volatile products?

For the purposes of our experiments on this question cats were chosen, as this animal is known to be highly susceptible to lead poisoning, and in several experiments 6 animals were kept for a period of seven days in close proximity to freshly painted surfaces, repainted each day till there was a thick skin of paint on the boards.

The results were entirely negative in all cases; the animals fed well throughout, retained their weight, remained to all appearances normal and well, and were kept for some months afterwards without showing any signs of chronic lead poisoning or other symptoms.

As a result we conclude that under the conditions of our experiments volatile lead poisoning, or any other toxic effect from wet lead paint not produced by actual contact or inhalation as lead dust, must be ruled out.

The experiments were carried out by placing the animal in a wire cage with wide meshes of about 4 in. by 1 in., and then inverting over this a wooden box which cleared the cage in all dimensions by about 4 in. The internal dimensions of the box were 26 by 21 by 21 in., and the dimensions of the cage were 22 by 17 by 17 in. There was a floor of linoleum, and a layer of straw in the bottom for the animal to rest on. The box was raised 1 in. from the floor all round by means of four small supports at the corners. The whole of the interior of the box was painted thickly every morning, the boards having been left unplaned to give an increased rough surface and greater evaporation.

Experiment I.—A cat was placed as described above, and the interior of the box was freshly painted with a paint made from basic lead sulphate, boiled linseed oil, and terebine driers, called "liquid driers," every day for a period of ten days. Throughout this period the animal was carefully observed, and no ill effects of any kind were observed. It appeared lively and well, ate its food regularly, and respiration, circulation, and central nervous system remained normal and undisturbed. The animal was kept under close observation for a period of two months, and no chronic effects of any kind were observed.

Experiment II.—A second cat was similarly treated in a cage covered closely by a box painted freshly daily for a similar period of ten days with a paint made from basic lead carbonate, boiled linseed oil, and "lead driers." This animal also remained perfectly healthy and unaffected, and was likewise observed for an after-period of two months with completely negative results.

Experiment III.—A large cat, weighing 3.8 kilograms, was placed in a cage surrounded by the box as before; the interior of the box was freshly painted daily with a thin paste of "genuine carbonate of lead" (white lead made up with pure boiled linseed oil). About seven pounds of this mixture was used over a period of seven days, and the cat was kept in the box afterwards till the surface had dried. The animal remained perfectly well, ate well and maintained its weight, and the same held for a period of over a month afterwards during which it was observed.

Experiment IV.—Another large cat weighing 4.7 kilograms placed in a cage surrounded by a similar box, painted with a basic sulphate of lead similarly mixed up with boiled linseed oil, also showed no effect whatever, remaining well with an excellent appetite and no loss of weight. This animal was also observed for an after-period of one month with negative results.

Experiment V.—A cat weighing 2,940 grams was placed in the cage, and covered by the box which was freshly painted daily for six days with a paint made up as for ordinary use with basic carbonate of lead (genuine white lead—basic carbonate, stack process), linseed oil, and turpentine. There was no obvious effect of any kind, the animal remained well, appetite good, and weight constant.

Experiment VI.—A smaller sized cat, weighing 1,795 grams, was placed in the cage, and covered by the box, which was in this case painted with a paint made of basic sulphate of lead, linseed oil, and turpentine, as in the previous experiment, and the box was painted daily for a like period. The results as before were entirely negative.

It may be concluded in our opinion from these experiments that there is no poisonous emanation from either basic lead carbonate or basic lead sulphate, even with much more thorough exposure than would occur to painters, or occupants of a freshly painted room, under ordinary conditions. For the animals were exposed within a few inches of a freshly painted surface surrounding them on all four sides and roof as well. It may be taken that true lead poisoning when it does occur arises from swallowing, inhalation as dust followed by swallowing, or absorption from skin or an abraded surface, and not from volatile emanations.

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THE INFLUENCE OF COPPER UPON THE GROWTH OF MOUSE CARCINOMA.

BY A. J. GELARIE, M.D.

(From the Cancer Research Laboratory, University of Liverpool.)

DURING the last decade the surgical treatment of cancer has been supplemented by attempts to influence the growth of tumours by procedures directed towards causing immunity, as well as by physical methods—for example, *x*-raying, exposure to radio-active substances, fulguration, the action of chemical substances, such as arsenic and selenium in various combinations—with the object of causing retrogression of the tumour.

The substances which tend to produce immunity to carcinoma are not at all well defined chemically. Attention has, however, also been paid to the action upon carcinoma of compounds of relatively simple chemical composition.

The idea of studying the effect of copper upon carcinoma occurred to me while carrying out an investigation directed to exhibit the influence of metallic salts upon various staining methods in common use. To this end the present experiments were undertaken. These fall into two series—in the first a solution of a cuprammonium sulphate was injected subcutaneously into tumour mice; in the second colloidal copper was employed.

Subcutaneous Injection of Cuprammonium Sulphate into Tumour Mice.

Cuprammonium sulphate ($CuSO_4.4NH_3.H_2O$) was obtained by adding to a saturated solution of $CuSO_4$ strong ammonia and then boiling; the blue crystals of the cuprammonium salt, which separated out upon cooling, were dissolved in 0.85 per cent. NaCl solution and used for injection, the concentration of the solution employed ranging from 0.62 per cent. to 0.70 per cent. of metallic copper.

The lethal dose of this salt was found to be represented by about 0.05 gram of copper per kilogram of body weight. The injections were made subcutaneously at a distance from the tumour. Only mice with small tumours were employed for experiment, and it may be observed, in reference to the experimental results, that spontaneous retrogression of mouse tumour has been in our experience an excessively rare event.*

The results of experiments made with cuprammonium sulphate are summarized in Table I, the number of injections varying from two to five. The injections, which frequently caused inflammatory swelling, sometimes leading to necrosis of the skin at the site of injection, were always made as far as possible from the tumour so as to avoid any direct effect upon the growth.

TABLE I.—*Subcutaneous Injection of Solution of Cuprammonium Sulphate into Tumour Mice.*

Condition of Tumour at End of Experiment.	Number of Animals.	Percentage Results.
Completely disappeared ...	3	25.0
Nearly disappeared	1	8.2
Diminished in size	1	8.2
Stationary	5	42.0
Increased in size	2	16.6
Total	12	

In three cases complete disappearance of the tumour occurred, and in two other cases great diminution in size took place. In five experiments the tumour remained stationary for periods varying from five to ten days, and in the remaining two experiments an increase in size of the tumour attended with softening took place.

Subcutaneous Injection of Colloidal Copper into Tumour Mice.

With a view of avoiding the local inflammatory reaction which occurs when cuprammonium sulphate is used, it was determined to employ colloidal copper for subcutaneous injection. This was observed to be slowly absorbed without producing a marked irritating effect.

Colloidal copper was prepared after Bredig's method, a galvanic current of 10 ampères being allowed to pass between two thick copper electrodes immersed in a beaker containing distilled water, free from CO_2, placed in a larger vessel filled with ice. In this way a colloidal solution of copper was obtained containing 0.04 to 0.3 per cent. of copper. It was found that the colloidal solution could be boiled without precipitation occurring, and when air was excluded no change in the aspect of the liquid occurred in the course of several days. In all the experiments made, however, the colloidal solution of copper was freshly prepared. The addition of stains such as methylene blue, eosin, and basic fuchsin, in small quantity, was found not to precipitate copper from solution.

A solution of colloidal copper is incompatible with saline solutions. A very small quantity of sodium chloride solution, for example, causes precipitation almost immediately. It was, therefore, used in a non-isotonic solution, the injections being slowly made into the subcutaneous fascia in amounts of about 1 c.cm., in several areas removed as far as possible from the tumour in order to avoid a direct effect of the copper; in some cases intraperitoneal injections were employed (1 c.cm.), or both methods of injection were used. The minimal lethal dose of colloidal copper was not determined.

The results of subcutaneous injection are summarized in Table II. In all thirty-two experiments were made, the number of injections into individual mice ranging from two to seven. In these experiments it was found possible to keep the animals alive a much longer time than was the case when cuprammonium sulphate was employed. Nevertheless, the number of cases in which complete disappearance of the tumour was obtained was relatively less than in the preceding experiments. In the greater number of experiments in which an effect upon the tumour was observed this was manifested by the tumour becoming stationary in size. On reference to Table II it will be noticed that the effect upon the implanted tumour of injection of colloidal copper was much less pronounced than when cuprammonium sulphate was used. Some of the stationary tumours were kept under observation for a very much longer period of time than in the preceding experiments; in one case the tumour remained stationary for as long as three months.

TABLE II.—*Subcutaneous Injection of Colloidal Copper into Tumour Mice.*

Condition of Tumour at End of Experiment.	Number of Animals.	Percentage Results.
Completely disappeared ...	2	6.3
Diminished in size	4	12.5
Stationary	16	50.0
Increased in size...	10	31.2
Total	32	

In four experiments, not recorded in Table II, repeated intravenous injections of colloidal copper were employed. The amount of fluid injected always exceeded 1 c.cm., and in one case reached as much as 2 c.cm.† After the latter injection the mouse became collapsed with rapid and deep respiration, subsequently recovering and surviving for forty-two days. With this exception no ill effect followed upon injection. After intravenous injection the implanted tumours increased slightly in size during the next few days, and then became soft, subsequently remaining

* The tumours used for experiment originate from Ehrlich's Stamm XI, which has been cultivated in this laboratory for the last seven years, and ordinarily gives 75 per cent. to 100 per cent. positive results of implantation.

† I have found the following method best for intravenous injection: The tail of the mouse was placed for a few minutes in water at 45° to 50° C. The veins soon swelled up, and no difficulty was experienced in passing a fine needle into the vein. The injection was made with great slowness. White mice were found to be most suitable for experiment, the vein being easily recognized in such animals. During injection the fluid could be seen passing along the vein.

stationary. On sectioning these tumours very marked degeneration was observed. The results obtained in this and the preceding section show that by means of injection of copper-containing fluids implanted tumours in a certain proportion of cases pass into a stationary condition or undergo regression, and suggest that a similar result might be obtained in cases of spontaneous carcinoma.*

In those cases in which the tumour was unaffected a possible explanation is that the amount of copper absorbed into the circulation was too small to produce an appreciable effect. In the case of ammoniated copper sulphate difficulty was experienced owing to the irritating character of the liquid employed; in the case of colloidal copper difficulty was experienced owing to the large amount of fluid which it was found necessary to inject.

Reference may here be made to a series of nine experiments in which colloidal copper, to which basic fuchsin had been added, was employed for injection. In these experiments an unexpected result, which is difficult to interpret, was obtained—namely, that the growth of the tumour was in all cases unaffected by the injection.

Before concluding this paper I have much pleasure in expressing my great indebtedness to the director of this laboratory, Dr. J. O. Wakelin Barratt, for his kind attention and constant assistance.

EIGHTY-FIRST ANNUAL MEETING

OF THE

British Medical Association.

Held in Brighton on July 23rd, 24th, and 25th.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICAL SOCIOLOGY.

REGINALD JOHN RYLE, M.D., M.A., President.

PRESIDENT'S INTRODUCTORY ADDRESS.

MY first duty is to welcome those members of the Association who are kindly helping us with their presence, their papers, or their speeches; and my second duty is to welcome those who are not members of the Association, but who have done us the honour of accepting the invitation which we have the power to extend in the case of this particular Section to non-members. Most of the Sections now meeting in this building are dealing with particular branches of medicine and surgery from the points of view of physicians and surgeons who are discussing medical and surgical problems with their professional brethren. There are, however, a large number of topics of great importance which interest both the public at large as well as the doctor in the course of his work. These may be profitably dealt with, from either point of view, in language not always technical, and it is with the object of introducing such a consideration that this Section has been brought into being. The definition of Sociology appearing on our syllabus is:

> The scientific study of society and of all the phenomena it exhibits, including the various forces and processes at work within and upon it.

I do not wish to enlarge upon that definition, but merely to hold it out as a kind of thread on which we may hang the consideration of the problems as they arise. Medical sociology means a similar study, having reference to the work of the medical profession. Such work is very much wider than it was even half a century ago. No one who has read any one of the reports issued by Royal Commissions on housing, education, inebriety, feeble-mindedness, destitution, can fail to know that there is involved in every one of them a larger or smaller social problem with which the profession of medicine is concerned, so that I hope every year this Section will be more and more useful.

We have endeavoured to select subjects which will cover a large area of ground and be of interest both to medical and non-medical minds, and which may be said to have a mutual connexion between them. At the beginning we have taken the subject which goes by the name of eugenics. Let me remind you that eugenics is a very old conception. Far back in the days of the ancient Greeks the poets and philosophers fully realized that if you are to get the best men and women you must pay attention to the best stock and the best race. That consideration has never been absent from the minds of diligent students from that day. The matter, however, has been revived and very largely set on a new footing by the work begun by Darwin and Wallace, carried on by Mendel, and carried further by the late Francis Galton. Therefore I hope we may keep in view Galton's revival of the word with some of the signification he attached to it. Remember that eugenics have primarily to do with racial qualities, which are being studied by two methods—the biological and the statistical or mathematical.

DISCUSSION ON "EUGENICS."

OPENING PAPERS.

I.—EDGAR SCHUSTER, M.A., D.Sc.,

First Galton Research Fellow.

THE SCOPE OF THE SCIENCE OF EUGENICS.

THAT there is a sort of antagonism between the arts of medicine and eugenics has been recognized for some 2,400 years. Its nature is clearly indicated by Plato in the *Republic* in the passage in which Socrates is represented as making a comparison between the older school of medicine and the school which was active in his own day. The former, which he personifies under the name of Asclepius, he regards as working on eugenic lines, whereas the very successes of the latter were, in his opinion, dysgenic in their effects.

> If Asclepius did not instruct his descendants in valetudinarian arts, the omission arose not from ignorance or inexperience of such a branch of medicine, but because he knew that in all well-ordered States every individual has an occupation to which he must attend, and has therefore no leisure to spend in continually being ill. . . . And therefore our politic Asclepius may be supposed to have exhibited the power of his art only to persons who, being generally of healthy constitution and habits of life, had a definite ailment; such as these he cured by purges and operations, and bade them live as usual, herein consulting the interests of the State; but bodies which disease had penetrated through and through he would not have attempted to cure by gradual processes of evacuation and infusion; he did not want to lengthen out good-for-nothing lives, or to have weak fathers begetting weaker sons.

Now medicine to-day, as in Plato's day, endeavours to lengthen out lives of all sorts, and does not presume to judge what are good for nothing and what are not, and it enables weak fathers and mothers to have children; and in this respect it may be accused with some justice of being dysgenic. Eugerists are sometimes represented as being a savagely tyrannical clique who regard the lethal chamber as a more valuable institution than the hospital, and castration the greatest good to be got out of the surgeon. Perhaps what I have just said may appear to give some support to this view, so I take the opportunity of stating most emphatically that eugenists are not antagonistic to medical science, even if it does lead to the prolongation of good-for-nothing lives. But the fact that the work of doctors on behalf of humanity may by its very success lead to results which eugenists deplore, imposes a sort of obligation on the medical profession to make what contributions it can to the science of eugenics. Eugenics in some of its aspects may indeed be regarded as a branch of preventive medicine, and the proverb that prevention is better than cure is in this field more true than most proverbs, at any rate from the point of view of the lay public.

It is for these reasons that I shall endeavour in the present paper to give a brief analysis of some of the principal problems in eugenics as they appear to me, with the object of arousing discussion on the nature of the contributions to the science of eugenics which might fairly be expected from medical men.

*Since commencing these experiments my attention has been called to the work of Loeb, McClurg, and Sweek, in which human cancer has been treated by intravenous injection of colloidal copper (*Interstate Med. Journ.*, 1912). The authors are of opinion that definite judgement on the outcome must still be suspended at present, but state that the treatment is capable of causing gradual retrogression of the growth.

A detailed survey of the ground is hardly practicable on this occasion, but a sort of preliminary triangulation may be attempted, and for this purpose the first fixed point is the study of heredity. The study of the inheritance of disease must be, in so far as the collection of data goes, almost entirely in the hands of the doctor, and with regard to some diseases much admirable work has already been done. The possibility of explaining the inheritance of diseases and defects on Mendelian lines has undoubtedly acted as a valuable stimulus in the collection of data, since in favourable cases the manner in which a disease is inherited may be shown by one carefully collected pedigree. It is thus possible within a reasonable time for one individual to make a definite contribution to the subject. Although this has had the enormous advantage that it makes it more worth while for a man to investigate a family history than if a vast number had to be collected before any generalization could be made, it has led to some results of a not altogether desirable kind. One of these is that the amount of attention that is paid to the hereditary aspect of a disease is in proportion to the chance of its transmission being explicable on Mendel's hypothesis or some extension of it, a chance quite independent of its social importance. For the scientific study of inheritance, haemophilia, or night blindness are subjects as good as tuberculosis. Yet I make no apology for insisting that at the present time it is of greater practical importance to study the hereditary elements in the causation of the latter than of either of the former. The Departmental Committee on Tuberculosis in its final report, which dealt principally with the prevention of the disease, entirely failed to consider this aspect of the question, although presumably it had access to the best medical advice. The question must be one of the greatest difficulty, since one's liability to a severe attack of the disease appears to depend on three variables; (1) The degree to which one is personally susceptible, determined probably largely by heredity; (2) the opportunities presented to the tubercle bacillus of invading one's body; (3) the virulence of the particular tubercle bacilli with which one is attacked. And in a thorough study of the question all these three elements would have to be dissociated. The attempts to do this must be made in the first instance by the careful observation of tuberculous families, and who can do this but the doctor who attends them? Yet the experience of one man would never provide sufficient material, and so one is driven to the conclusion that some form of co-operation is necessary.

All circumstances affecting human qualities are of interest to the eugenist, so next to heredity he must turn his attention to the action of the environment. If the term is used in its widest sense, a formidable array of problems are included under this head. As a first step towards arranging them in order, those which concern the action of the environment on the individual before his conception may be separated out. In delimiting this group we get perilously near that much-gnawed bone of contention "Are acquired characters inherited?" A part of it has recently got broken off and has given rise to noisier barking and more vicious biting than ever it did in the days when it was whole. I am, of course, referring to the question, "Does alcoholism in the parents affect the germ plasm in such a way as to influence the quality of their children?" We must turn to medical men for a solution of this problem too. The simplest and directest way of attacking it would appear to be the comparison of the quality of children born before and after one or both of the parents took to drink. The chance would have to be allowed for that any changes observed might be due to the moral and economic degradation of the home conditions which often result from alcoholism.

There are many other problems of a similar nature, but we will leave these and consider the alleged action of environment at the moment of conception. The alcohol problem comes up again here as some of the anti-alcohol propagandists assert, it must be said on very insufficient grounds, that particularly baneful effects result from drunkenness on these occasions. The season of conception is also supposed by some to affect the vitality of the offspring, and even the weather has had an influence attributed to it.

Aristotle recommended the winter as the best season for marriage, and, further, remarked that parents, "in view of the procreation of children, should pay attention to the rules of physicians and natural philosophers, the former of whom are competent authorities upon the occasions suitable to their physical condition, and the latter upon the various kinds of winds, northerly winds being, in their judgement, preferable to southerly."

In a recent statistical investigation, Professor Gini failed to discover that the season of conception had any influence on vitality, though it might well appear to have such an influence, since the season of birth affects one's chances of surviving early infancy. Other factors to which weight has been attributed, which may be regarded as determined at the moment of conception, are the ages of the parents and one's place in order of birth.

We next come to the period after conception, but before birth, when the child's environment is determined directly by its mother. Here again the problem of alcoholism turns up, while the effects of other poisons and of the mother's habits and employment are also problems of the gravest importance, which come normally within the sphere of medicine. The importance of caring for the mother's health during this period was very clearly pointed out by Aristotle, who said that "the children are affected by the state of the mother during pregnancy, just as plants by the conditions of the soil." Good food, freedom from anxiety, and reasonable exercise were the rules of health which he laid down, and, as the Greek ladies of his time do not appear to have taken exercise from a love of the thing, he recommended that a law should be passed compelling them to walk daily to render service to the gods whose function it is to preside over childbirth. As the temples of these deities were generally outside the city wall, this would entail a stroll of reasonable length.

The actual period of birth is also of interest to the eugenist, as it is asserted that injuries received during this anxious time are sometimes the cause of idiocy and feeble-mindedness. It is also maintained that the successes of the obstetric surgeon are essentially dysgenic, since they allow the perpetuation of stocks in which the women are defective in the capacity for normal and healthy labour.

After the child is safely born I do not think that, strictly speaking, the eugenist should take any more interest in him, or if he does it should be merely because he regards him as a potential parent. This is, however, such a very large exception that little is left of the rule. The environment may act on the potential parent so as to affect the inborn qualities of future generations in two ways. The first, and probably the most important, way is by selective action—by favouring in one way or another the parenthood of individuals with some particular qualities. When we consider first the incidence of mortality in early life, the much-debated problem presents itself, Do the fatal diseases to which young infants are particularly liable kill at random in so far as the inherent qualities of the infants are concerned, or are the weaker taken and the stronger left? All sorts of opinions are expressed on this point, none of them suggested by very good evidence.

Then the diseases of childhood—measles, scarlet fever, and so on—may be selective in their action. There is in this case some definite ground for supposing that those who are naturally less resistant to these diseases have more chance of being killed by them, and that thus gradually races are evolved for whom they are seldom fatal. This kind of selection becomes doubly interesting when some definite physical or mental quality is coupled with resisting power or with the lack of it. If, for example, red hair goes with a particular liability to suffer from scarlet fever, as has been maintained, one can see that scarlet fever may have quite a far-reaching effect in determining national characteristics. For red hair may be itself coupled with qualities of greater social importance, possibly because it is to some extent an indication of racial origin. Whether this is actually the case or no, the point that I wish to emphasize remains a good one—namely, that when one character or quality is directly selected, an indirect selection is exercised to some extent on all characters and qualities which are coupled or correlated with it. Even if one accepts completely

the Mendelian view of inheritance with its discreet and independent unit characters, it should not blind one to the close interdependence of all parts of the body or the intimate relation between bodily and mental functions.

But selection for parenthood is exercised in other ways than by the action of such of our fellow creatures as the bacteria or parasitic protozoa. Environmental selection may work in ways too numerous even to mention on the present occasion. Occupation, social position, race, religion, all have their say in determining what share each shall have in producing the populations of the future. To find out exactly what is this share is one of the tasks of the eugenist. He must also work backwards, and find out what qualities lead different individuals into different environments. We must be careful not to assume that the environment is thrust haphazard on us, for it is largely moulded by our own characters.

In conclusion I must apologize for the fact that the title of this paper does not very accurately define its contents. I have only attempted to discuss a very small part of the scope of the science of eugenics, and many conspicuous omissions will be apparent to you.

II.—Harry Campbell, M.D.,
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EUGENICS FROM THE PHYSICIAN'S STANDPOINT.

While hygiene seeks to discover the conditions which make for the health of the individual *in esse* (from the first moment of embryonic life), eugenics is concerned with the individual *in posse*. Its object is to promote the welfare of the human race by encouraging biologically suitable and discouraging biologically unsuitable matings: it is, in short, the science of man-breeding.

The methods of the eugenist, to be genuinely effective, must be founded on the laws of organic evolution. The prime fact for him to keep in mind is that man, like every other species of living thing, has evolved by natural selection—that is, by the continued elimination through successive generations of unfit types, and the consequent survival of the fittest. The eugenist has further to bear in mind that the work of natural selection on any given species is not finished when it has secured the evolution of that species. Its continued operation is needful (*a*) in order to maintain the standard of efficiency, and (*b*) in order to adapt the species to those progressive modifications in environment which take place from generation to generation.

(*a*) As regards the maintenance of efficiency, the offspring by no means all conform to the standard of parental excellence; they tend to vary round the mean. Some may fall considerably short of it, and these require to be eliminated, if the standard is to be maintained. Take, as an instance, the case of eyesight. In order to maintain this at a high level of excellence, there must be a rigorous elimination of all those presenting visual defects. Among primitive peoples even a moderate degree of short sight places the individual at a disadvantage in the hunt and the fight, and renders him liable to premature death. And what is true of the visual organs is true of all the organs and functions of the body: they are all liable to fall below the normal, and only by the stringent operation of natural selection is it possible for a high standard of excellence to be maintained.

(*b*) In regard to the progressive changeableness in man's environment, consider how greatly his diet has altered within recent times, and how infinitely changeable is his environment as regards the onslaught of pathogenic micro-organisms.

Now, seeing that it is only by the stringent operation of natural selection that a high standard of racial fitness can be maintained, it follows that any interference with this beneficent process must tend to lower the standard. We know that civilized man does interfere with the operation of natural selection. He saves, by artificial means, numerous defective types, which would otherwise be eliminated, and prevented from handing on their defects to future generations. Thus the standard of racial fitness is lowered. The triumphs of surgery, of therapeutics, nay, even in a measure also of hygiene, while they make for the good of the individual already born, or on the road to being born, all tend to lower the racial standard. Man is seeking to obtain efficiency by bestowing infinite pains on the individual. Nature's method, which has been in operation since the first dawn of life, is not that of bolstering up the unfit, but of wiping them out. Her chief concern is to produce the best and to secure the survival of the best. Only in this way can racial efficiency be maintained.

But while this picture is somewhat sombre, we must be careful not to paint it in too sombre colours, for in truth the extent to which man can check the process of natural selection is, after all, limited, and it is important that the eugenist should realize the fact. Biologists, even leading ones, have fallen into the strange error of supposing that natural selection has ceased, or nearly ceased, to operate on civilized man. We are exultingly told that man has cast off the yoke (*sic*) of natural selection, as though it were some dread curse, instead of being, as it actually is, the magic ladder by which man has climbed to his present pinnacle of excellence, and by which alone it is possible for him to continue his ascent.

It is true that man's revolt against natural selection has been the means of saving many lives. This is indeed a triumph, but not an unqualified one. In so far as the lives saved are unfit, their preservation is not, eugenistically speaking, commendable. It is, however, equally true that this vaunted revolt is far less effective than appears at first sight, and that over man, as over all living things, natural selection continues to exert its inexorable and beneficent sway, and will continue to do so so long as man exists. We may seek to elude its operation, but our success can never be more than a partial one.

Let us very briefly consider the part which natural selection has played, and is still playing, in man's evolution. First, a word as to his mental evolution. In some papers recently published by me in the *Lancet* I have endeavoured to indicate the factors which have determined man's mental evolution from the ape, and to ascertain how far these or other factors are operative at the present time, and are likely to operate in the future. In this way I have attempted to forecast his psychic destiny.

Mind has a twofold aspect—that pertaining to the intellect (thought, the flow of ideas), and that pertaining to the feelings, which play a large part in dictating conduct. I have been led to the conclusion that man's intellectual evolution from the ape was determined by three main factors (factors, that is, which favoured the survival of the most brainy); that in the case of neo-civilized man these factors have ceased to operate; and that with him, therefore, intellectual evolution has practically come to a standstill. On the other hand, it has seemed to me that agencies influencing the evolution of man's moral nature are still in active operation, and that he is still evolving, and will continue to evolve, in the moral sphere. Ever since the first evolution of tribal life natural selection has been busily eliminating the morally defective—those unable to conform to the customs and laws of the tribal community. And this active elimination has continued right down to the present time. I doubt if we adequately realize to what extent the elimination of the morally unfit is proceeding among us. The lazy, the intemperate, the dishonest, the aggressively antisocial, those who love not home life, those who shun the cares and self-sacrifice demanded of fatherhood and motherhood—these are one and all being eliminated, while their opposites are surviving, and the attributes which secure their survival are becoming racially accentuated. In other words, man is still evolving on the moral side.

So much for the operation of natural selection on man psychically considered. Let us now consider its influence on physical man. It was by the survival of favourable morphological variations that the evolving man came to take on his human form. Having secured the evolution of the species *homo*, natural selection still continued in operation, both in order to maintain the standard of fitness and in order to bring about adaptation to those progressive environmental changes which are inevitable in the case of all species. Since the introduction of civilization these changes have been pronounced, especially in regard to his exposure to pathogenic microbes, and in the matter of his diet.

Directly men began to wear clothes and to congregate in towns, and to meet in large numbers under one roof, he came to be exposed to the attack of pathogenic microbes to an extent which was quite new to him; and ever since natural selection has been busily at work eliminating those least capable of resisting them. And be it noted that the ability to resist the onslaught of his microbic foes is as necessary to the survival of man as the possession of those obvious features by which he is identified by the zoologist. Excellence in other respects avails him nothing if he is seriously lacking in this one, let him have the beauty of Apollo, the wisdom of Socrates, or the goodness of a saint.

The zoologist, concentrating his attention on obtrusive features, is too apt to think that it is upon them alone that natural selection operates. We may rest assured that no matter how fiercely and persistently man may war against the world of pathogenic microbes, he will never obtain complete mastery over them. Natural selection will always be necessary in order to maintain a high racial standard of resistance to them.

As regards man's diet, I will limit my observations to some of the changes which have occurred within recent times. So far as the British Isles are concerned, we may call this the "age of pap," seeing that most of our vegetable food is taken in a pappy or semi-pappy form. As a result, the jaws and teeth are inadequately exercised, while the stomach is flooded with a superabundance of starch little, or not at all, predigested by admixture with saliva. Hence normally-formed jaws are rarely if ever met with in these isles, while the condition of the teeth is deplorable indeed. Hence also the distressing prevalence of rickets and adenoids among our children. I should weary you by enumerating the long array of digestive disturbances, from ulceration to appendicitis, to which this pernicious system of pap-feeding gives rise. How I wish I could get our people to realize that much the most urgent reform needed at the present time is a doing away with it! But this by the way. My object here is to draw attention to the fact that the large mortality brought about by our modern dietetic methods affords an instance of the operation of natural selection. Doubtless if these methods were adopted by all the peoples of the world for many thousands of years the human race would become adapted to them.

The operation of natural selection on neo-civilized man, however, is not limited to those who are incapable of coping with pathogenic microbes, and modern systems of dietary. It is far more extensive in its scope. In point of fact all deaths occurring before the end of reproductive life, and not due to trauma, are instances of its action, indicating as they do defective adaptation to the environment.

The higher the mortality, the more stringent is the operation of natural selection. Hence, as already hinted, stringent hygienic measures are by no means wholly advantageous to the race. By minimizing the dangers to life they increase the number of weaklings surviving. On the other hand, insanitary conditions, by eliminating the weaklings, favour the evolution of a hardy race. While harmful to the individual, they strengthen the race. This is true even of slum life. Similarly, it is more than probable that drunkenness, while individually baneful, by the elimination of degenerate types, is racially beneficial.

My object hitherto has been to show that even if no attempt be made to obviate by eugenic means the deterioration which is taking place in civilized man owing to interference with natural selection, such deterioration has its limits, which, if not already reached, very soon will be; for natural selection is still actively at work upon him, and may safely be relied upon to prevent the human race from falling appreciably below the present standard. Dr. Mott has shown that insanity, when inherited, tends to appear at a progressively earlier age in each succeeding generation, and thus to be racially eliminated.

Let us now inquire how far it is practicable to put the principles of eugenics into operation. A friend of mine who worships the beautiful, and detests physical ugliness in any form, once told me that, if he had his way, none but the beautiful should be permitted to multiply; and when it was objected that many people with beautiful characters might in this way be lost to the race, he somewhat brutally replied that, commendable as virtuous ugliness undoubtedly was, he, personally, could very well dispense with it; that, having secured a physically beautiful race, it would be time enough to set about eliminating the morally defective, and so breed a race of humans beautiful alike in mind and body. Such an achievement is indeed—theoretically, at least—possible. In a similar way we might greatly improve man's intellectual powers. One might, in short, breed a race of supermen, converting man as he is—a sorry caricature, alas! of the ideal—into a being perfect in form and supreme in intellectual and moral endowment.

Such an achievement is manifestly impracticable; but this does not imply that the aims of the eugenist are wholly chimerical. On the contrary, they have a solid basis in fact. I have said that the object of eugenics is to encourage eugenistically fit unions and to discourage such as are unfit. The former object—one, in my belief, of the utmost importance—scarcely comes within the range of practical eugenics—at the present time, at least, whatever may be the case in the future. The way in which the physician can effect most good eugenically is by the prevention of unfit marriages. In the case of the educated classes, at least, he is not infrequently called upon to decide whether a contemplated marriage is eugenistically desirable, and, in view of the great responsibility thus thrown upon him, it behoves him to be ready with a well-formed judgement on the matter.

To this end he requires to have a practical knowledge of the principles of heredity as formulated by the professed eugenist, and a detailed family history of the parties interested.

In certain cases there can be no doubt as to his course. The presence of such serious diseases as phthisis, organic heart disease, epilepsy, insanity, chronic Bright's disease are obvious bars to marriage. Not only the actual existence of any one of these diseases, but the having had it and recovered from it, would, in my opinion, constitute unfitness. The same restriction applies, I think, to rheumatic fever (certainly if there has been more than one attack), and to most cases of acute Bright's disease not due to scarlet fever, especially when the inflammation has been of more than two months' duration.

It is scarcely necessary to say that those possessing serious congenital defects, such as of sight and hearing, should not propagate their kind.

There are other diseases, equally serious in themselves, but the having suffered from which is not usually regarded as a bar to marriage. I allude to all those cases of non-accidental diseases in which life is saved by the surgeon's skill. Most individuals of this class should be regarded as procreatively unfit. Take the case of a person with strangulated hernia, fulminating appendicitis, or ovarian cyst. But for the surgeon such an one would be weeded out as unfit, and thus prevented from handing on his weakness. Let us use all the means at our command to rescue such sufferers from death, but it must be on the clear understanding that no children shall be born to them afterwards. Think of the millions of women suffering from ovarian cyst whom Nature, with cruel kindness, has in the past sacrificed in order to maintain a racial standard of ovarian fitness. In neo-civilized communities these are now practically all saved, with the result that the percentage of ovarian cysts must necessarily increase. It is only because the potency of heredity is not realized that the propagation of children by women whose lives have been saved in this way is sanctioned.

A class of disorders which, in my judgement, constitute a serious bar to marriage are the functional nervous disorders. The supersensitive are not suited for this hard world. Its strenuous conditions call for men of iron nerve and stout hearts. The lives of the supersensitive are often one long-drawn-out misery. To them I would say: "Remain single." The neurotic man is often advised to marry, on the ground that wife and children will draw him out of himself; and, so far, the advice is doubtless good, but I fail to see what right we have to sacrifice the prospective wife and children. I have seen too much home misery caused by neurotic parents to connive at such an arrangement.

But it is one thing to advise and quite another thing to get our advice followed. How are we to get people to act

in accordance with the principles of eugenics? I may say at once that I do not advocate any legal restraint on eugenically unfit marriages. Let us hope that this will never be found necessary. Our object should rather be to foster the development of a eugenistic conscience in the community. To this end the public should be educated in the elementary principles of evolution, and be taught to realize the more glaring facts of heredity.

They must be made to realize that the responsibility of making a life is scarcely less tremendous than that of taking one. As it is, one of the last things that occurs to a person contemplating matrimony is whether he is fit to be represented in posterity. I know of few things more remarkable than the extreme self-complacency of human beings in this respect. Neither religion nor ethics has yet assimilated the findings of science. We still pray to be delivered from plague, pestilence, and famine, as though they were visitations of divine wrath, when the means of deliverance from them has already in large degree been vouchsafed to us by the labours of science.

Much has yet to be done to get a sound public opinion, a sensitive public conscience, in these matters, such an opinion and such a conscience as I hold it should be one of our first duties to create. It will, of course, take time for society to get out of the old grooves of thought, sanctioned by almost the whole of our current fiction, as to marrying and giving in marriage; but surely when it is realized what are the tremendous issues at stake, we may appeal to the sense of duty; yet it were a very poor and inadequate sense of duty which could content itself with fulfilment of obligations to the living, heedless of those who shall come after. It is for us to insist upon the wrongness of bringing into the world, through deliberate disregard of parental unfitness, of degenerate offspring, and we shall be unworthy of the traditions of our profession if we do not, each of us in his own particular sphere, strive to bring nearer the day when not in a heritage of woe, but of blessing, the deeds of the fathers shall be visited upon the children.

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THE MIGRATORY FACTOR IN EUGENICS.

During the past three or four years I have been advancing the following propositions. The population of the British Isles may be regarded as being primarily composed of two elements—a native element and an intrusive element.

The native element is apparently a branch of the race known to anthropologists as the Atlanto-Mediterranean or Iberian race, characterized by a short, slender build, a long head, and a brunette complexion.

The intrusive element is derived from those races which have come from other lands and settled in the country. Of these the most important is the blonde race of Northern Europe, but there are others, such as the broad-headed Alpine race of Central Europe, the Jews, gipsies, etc., who have influenced the national composition in a lesser degree.

In parts of the country communities are still to be found in which apparently pure racial types occur, in some cases of the native, in others of the intrusive element. In other districts the type is more mixed, though one is obviously predominant; in others again it is difficult to say which is in the ascendant. Thus in the far north of Scotland the blonde element is strong; in Denbighshire, in Wales, the old Iberian type is found nearly pure; in urban districts the types tend to be inextricably hybrid, at any rate to the casual observer.

But in addition to regions where pure racial types occur or seem to be cross-bred, with the usual phenomena of segregation of ancestral types as generation succeeds generation, there is another phenomenon to consider. Following many centuries devoted to agriculture the nation, by the eighteenth century, consisted largely of an aggregation of small communities intermarrying little with each other, and undisturbed by any further intrusive racial elements. As a result the evolution of subtypes with certain apparently fixed characters ensued, these subtypes representing an intensive adaptation to local conditions and being clearly distinguishable on intimate observation as subtypes, though they may at the same time present recognizable traits of the original racial elements of the nation.

Now my sphere of practice is situated in the north-west of London, and extends to some of the outer suburbs. This is a residential district considerably favoured by Jewish people. I had noted, as others have done, their proclivity to catarrhs of all kinds, enlarged tonsils, adenoid growths, etc., conditions commonly associated with exposure to damp, and it occurred to me that the natural explanation of this proclivity lay in the fact that the remoter evolution of the Jews took place in South-West Asia—that is, in a region with a warmer, drier climate than North-West Europe. It seemed profitable on this hypothesis to inquire whether other intrusive racial types which help to compose the British people show signs of imperfect acclimatization to their present environment, and I was gratified to find that plenty of information on this point was to be had for the asking. That is to say, that valuable statistics on the relation of race to disease in Europe have been collected by Beddoe, Shrubsall, and others, showing that certain racial types exhibit certain definite and specific morbid proclivities. (No suggestion is made by these writers, however, as to *why* these racial types show these proclivities.) Among the most important facts was the demonstration that in this country blonde traits are associated with acute rheumatism, tonsillitis, heart disease, and osteo-arthritis, to which I can add, from my own observation, a marked tendency to catarrhs from the various mucous membranes of the body and a variety of ills secondary to acute or chronic conditions of catarrh.

This group of diseases is commonly and, I have no doubt, rightly attributed to exposure to damp in some form or other, which lowers the resistance of the body to the attack of micro-organisms of disease.

Now, the area of characterization of the blonde Nordic race is in the regions bordering on the Baltic sea—regions with a markedly lower rainfall than that of the British Isles, a somewhat colder and drier winter, and a subsoil mostly sandy and therefore permeable to moisture.

The inference to be drawn is, therefore, that representatives of this race among the inhabitants of the British Isles show, like the Jews, that they are not fully adapted to our climatic conditions—though I make the reservation that there are parts of this country where climatic and social conditions are, or have been, such as to enable the blonde race to reproduce itself satisfactorily after centuries of exile from the regions of its origin; and there can be no doubt that some degree of adaptive evolution has occurred where the blonde invaders have remained long undisturbed.

The trend of modern social conditions, however, finds the Jew at a distinct advantage compared with the derivatives of the blonde race. During the past century the drift of social movements has been towards urban immigration, and the Jews, both in their remote and in their more recent history, have had much racial experience of urban life.

The blonde, blue-eyed Nordic race, on the other hand, has always been, as history from the time of Tacitus onwards relates, a race requiring spacious surroundings, and not given to the construction of cities. It has therefore passed through no such competitive examination as the Jews, and its modern derivatives prove vulnerable to the effects of a damp climate and soil, and are unable, as careful statistics have fully proved, to withstand the stress of town life.

Returning once more to the subtypes I mentioned earlier in this paper as presenting an intensive adaptation to local conditions through long isolation and inbreeding, I may call attention to Professor Karl Pearson's affirmation that the result of inbreeding of one group of people of superior fertility in a given community will be the rapid domination of the community by that group. Superior fertility maintained generation by generation means superior adaptation to environment, and explains why we so frequently find long-established rural communities restricted to two or three surnames. Two years ago, in a paper read at the British Medical Association annual meeting, I quoted certain observations of Sir William Bennett which bear out the reality of this *intensive* adaptation of local types. Of course, there is disseminated through the nation a large class whose adaptive powers show a wider range.

Available food supply, in so far as it has maintained an unchanging character through the centuries, has exerted a selective influence in that those who throve best on it would find that fact would exert a survival value in their favour, but at the same time make them the more susceptible to any marked or rapid change in the national commissariat.

Now, the census of 1811 showed that 35 per cent. of the population of Great Britain was engaged in agriculture, and no doubt fifty years earlier the proportion was very much higher. It would be safe to say that in the middle of the eighteenth century the bulk of the nation consisted of an agglomeration of small communities of localized and specialized types.

How, then, does the nation, as at present composed, compare with it as it was then?

Well, we are confronted with the startling fact that in England and Wales only 8.8 per cent. of the population is engaged in agriculture, forestry, and fishing, as compared with 69 per cent. in Hungary, 42.7 in France, and 35.2 per cent. in Germany.

This means that a very large proportion of the nation has migrated from the home of its fathers. It is being called upon to exhibit powers of adaptation to conditions differing materially from those in which its ancestral stocks were evolved through century after century of steady, slow-changing rural life.

Consider what changes in our national life have occurred during the past 150 years as a result of the invention of machinery, the advent of the railway, the change from agriculture to industry as a national pursuit.

To achieve our industrial position in the world wholesale disintegration of these communities of ancient growth and the redistribution and mixing of their units has taken place mostly by urban immigration, but also through rural redistribution.

And to feed this multitude the products of the land on which they were formerly bred no longer suffice, therefore they are dependent on manufactured and imported foods for their sustenance.

Modern life has therefore inevitably become more complex, and it is certain that for many individuals it has become too much so. They cannot adapt themselves to the change, not because they come of an essentially degenerate stock, but because they are specialized and localized types—that is, specialized for certain pursuits, for certain social conditions, localized for particular climatic conditions, including soils.

This state of affairs has resulted from the force of economic currents sweeping irresistibly through the land, and, further, it has not been a slow and gradual change of social condition, permitting the evolution, step by step, of suitable types. It has been for practical purposes a sudden national mutation as great in degree as the southern incursions of northern barbaric hordes. The history of the nations tells of the inevitable degeneration that followed those barbaric raids, of the fate of the Langobards of Italy, in the Visigoths in Spain, of the Vandals in Africa, of the Aryans in India. The degeneration and extinction of these races ensued because the stress of changed environment was too great for their adaptive powers and too sudden to permit the evolution of adapting types.

The question is whether we are confronted with conditions making for our extinction, or, short of that, whether we are to expect a long period of national decline pending the regenerative evolution of types adjusted to the new order? Shall we meanwhile lose much or all we have gained through the long centuries of our history? If we are to triumph over circumstance we must face these questions unflinchingly, and we can hearten ourselves with the fact that we have access to knowledge which can be turned to practical account in a way impossible to nations earlier in history.

It is impossible and unnecessary in the brief space of time allotted to my paper to indicate all the factors arising from recent modifications in our national life which menace the national physique. Some are obvious enough, others are stealthier and subtler in their *modus operandi*.

Last year, in a paper read in the Public Health Section of this annual meeting, I recorded in some detail the effect I noted on country girls wishing to enter into domestic service who migrated from the Sussex Downs and the Sussex Weald respectively to the North-West of London, where a very large residential district is forming, the subsoil being composed of London clay. The gist of my observations was that the migrants from the Wealden clay apparently exhibited ready adaptation to the clay of North-West London, while those from the chalky Downs, where there is a strong infusion of the intrusive blonde race, fared far less well, being handicapped by a susceptibility to damp derived from their evolution on more permeable soils and an inadaptability to urban life which is a racial characteristic of the blonde type and its derivatives.

To make my contention clearer, I wish to direct attention to one out of several results of migration—the so-called catarrhal constitution. Every practising doctor is familiar with individuals and families (wholly or in certain members) who exhibit a special vulnerability of their mucous membranes, manifest in a readily produced disorder of the mucous surfaces and secretions caused by a lowered resistance to micro-organisms. The degree of ill health arising from this tendency may vary from a mere liability "to catch cold" to the most profound interferences with nutrition and physical development. It is responsible for some of the most troublesome chronic ailments, such as neurasthenia, sterility, deafness, chronic gastric or intestinal catarrhs. Enlarged tonsils and adenoid growths are usually manifestations of this diathesis, and it is unnecessary to enumerate the various ills that are directly due to them beyond mentioning the notorious fact that nasal obstruction is very frequently associated with pulmonary tuberculosis.

Now comes the crucial question, Why in a given community do certain individuals show this proclivity and others do not? Why does a family of children grow up weedy, dyspeptic, languid, readily fatigued in mind and body, liable to become the victims of the ills I have just enumerated, when at birth they appear just as well-developed and sturdy as other children who remain healthy as they grow? Is the finger of scorn to be pointed at them? Do they come of base stock? Are these the "unfit" we hear so much about?

I will give in answer the fruits of my experience in one of those immense communities forming in outer London, where the metropolis is thrusting its tentacles over the tracts of London clay. As it is largely a high-class residential district it attracts people who, in the main, come of healthy stocks, people who are winners in the battle of life, and theoretically exemplify the survival of the fittest.

But a quite considerable proportion of the children of those people who come to reside on the London clay exhibit this catarrhal tendency, and of these catarrhal subjects the majority exhibit traits of the intrusive elements, that is, are either blondes or blondish in colouring or are Jews. In other words, they come of racial stocks whose evolution has taken place on drier soils, so that when they come to reside on clay they are affected by its coldness and humidity. Restoration to suitable conditions has meant restoration of health.

These migratory movements have produced many other deplorable results to set off all we have gained as the workshop of the world. Last autumn, for instance, Dr. W. H. Hamer, Principal Medical Officer to the London County Council and President of the Epidemiological Section of the Royal Society of Medicine, read a presidential address before his Section, entitled, "The Influence of Migration on the Phthisis Death-rate," a paper dealing largely with returns from Sussex towns and villages. Among other important points he makes note of the tendency of girls who have left rural districts to enter into domestic and other service in the great towns to return to their native districts if stricken with phthisis or suffering from other forms of broken-down health. In this way the germs of disease bred and contracted in urban districts tend to be introduced to rural communities hitherto untainted, and may work havoc through the countryside.

It will be clear that these facts of Dr. Hamer have a direct bearing on the practical working of the ideal expressed in the cry of "Back to the land." This and other popular outcries for a return "to the simple life" or "to Nature," afford evidence of the awakening of national

consciousness to the fact that decadent forces are at work in our midst. It is the first of these cries that is loudest at present, and has seized the popular imagination so strongly that both political parties are making the "land question" a prominent "plank" in their respective "platforms."

I cannot deal in this paper with questions of more scientific methods of agriculture, rural housing, and other problems of the kind. I firmly believe, however, in the doctrine that the wealth of a nation lies ultimately in the quality of its men and women, and an *indiscriminate* urban exodus into a promised land of small holdings is not going to restore the national physique to the extent some of its advocates anticipate—the plagues of Egypt may not be wholly left behind. And is there no Sinai *en route?*

There is no doubt, however, that following the centripetal action of the city a centrifugal action is setting in. Our ancestors were careful in the sites they chose for their villages, but the mushroom growth of the suburb shows no such selective care, and the speculative builder still receives little check to the indulgence of his fancy. The recolonization of England is a movement requiring the most urgent attention from the point of view of national health, but there seems every prospect, for reasons I have already given, of a great thrusting of round pegs into square holes and square into round.

"Back to Nature" can mean nothing to man but back to the animal from which he sprang, for man acquired his status as *homo sapiens* by turning his back on Nature, determined to be a law unto himself. As Sir Ray Lankester has phrased it, man is Nature's insurgent son, and, though the maintenance of his health is still dependent on the strict observance of biological law, the measure of man is the degree to which he can force his environment to conform to his biological requirements.

Our trouble at present is that we are apparently at one of those transition periods which occur from time to time in history, when everything seems to be in a state of flux preparatory to the crystallizing out of new shapes and forms.

Instead of the *in*tensively adaptable type in demand in the age of agriculture, an *ex*tensively adaptable type meets the requirements of the industrial era. Nietzsche, in one of his savage but illuminating diatribes against modern social developments, has made this type of man, whom he perceived to be gaining the day, the victim of his keenest shafts of invective, urging that he simply invites the advent of the tyrant. He characterizes him as a useful, industrious, variously serviceable and clever, herd-animal-like man . . . . numerous, talkative, weak-willed, and very handy. (It sounds perilously like a description of the modern medical man who, in this country, has certainly already encountered his tyrant in one shape or another.) But Nietzsche puts the cart before the horse. It is the development of industry and its organizers that has called forth this type and ousted or crushed those of a more sturdy independence of character or less versatile adaptability. It was painful last year at Liverpool to see the type of emigrant crowding the transatlantic liners compared with the type pouring in at the port of London.

There is the more subtle danger that this extensive adaptability in some cases only covers a small portion of the industrial worker's life, and that for the rest of his existence he tends to become a burden on his family or on the State. The cry of "Too old at forty" is not without substantial cause. But lack of adaptability is mainly a characteristic of the child—the growing organism; the embryonic cell is far more impressionable than the mature, and readily reacts unfavourably to an unfavourable environment. Remember the European child in India.

The child, to grow to the standard of the stock from which it sprang, requires to be reared in an environment approximating or approximated to that in which its stock evolved. The immature organism is repeating the evolution of its species, and cannot attain to the capacities of the adult. For this reason the Anglo-Indian child is sent home. It may be true that the lowest forms of life exhibit some power of dealing with the unexpected. It is equally true that the adaptability of the highest forms is strictly limited.

If, then, it be admitted that the wholesale uprooting of our population from the land that bred it, the substitution of manufactured and imported foods for the products of the native soil, the merging of small communities with specialized energies into large communities with generalized energies, has increased the complexity of our social system to an extraordinary degree, has subjected this migrated population to a stress which falls heaviest on the children—how are we meeting the menaces to health and physical development engendered by these changes? What are we doing to ensure the maintenance of our position among the nations of the earth?

It is unnecessary to enumerate all the activities that social stress has called forth. But it is obvious from the outcries on all sides that we have not done enough—that the complexity of the situation has overpowered the resources of our preventive or remedial measures. The inauguration of the modern Eugenics movement marked a new era in the attitude of sociology towards the present state of affairs, but, so far, it is necessarily a case of faith without works, except where it has garnered statistics and information. It has been said that the last refuge of the complex is in simplicity, and certainly some of the measures advocated for dealing with the alleged unfit do not err on the side of complexity. But, even ignoring the vagaries of the "cranks" who always crowd into any new movement, it appears to me that the eugenists have not sufficiently discriminated between degeneration due to damaged germ plasm and degeneration which is simply caused by disharmony with environment.

I have before me, as I write, a copy of a pamphlet issued by the Eugenics Education Society, with a schedule of questions with regard to the health of the individual, his ancestry and collaterals, but no inquiry at all as to the origin and migrations of the ancestral stocks.

A celebrated French physician has remarked that "the further civilization develops the more it tends to favour the life of the individual rather than that of the species." It is in the discrimination of individual needs that social salvation lies, and this discrimination can only be attained by a keener appreciation of the biological basis of social phenomena and the peculiar relationship of man to his environment.

Now if the object of eugenics be to promote the physical and mental welfare of future generations, it must do more than construct elaborate pedigrees of reputed sound or unsound stocks—its consideration of factors must embrace a wider scope than that which, after much coruscation of the higher mathematics, ends in fixing the mean coefficient of environmental influence at + 0.03, as against + 0.51 for heredity.

I maintain that in the consideration of human inheritance the migratory factor is of prime importance, and once grasped, will afford the clue to much faulty development and otherwise unaccountable susceptibility.

I urge, then, that these molecular changes in the national composition have a strong bearing on the eugenics movement, and submit that no time is to be lost if a statistical inquiry into the effect of intramigratory movements is to be made, as the necessary data will soon fade into obscurity.

DISCUSSION.

Mr. E. J. LIDBETTER, who mentioned that he was connected with the administration of the Poor Law in East London, thanked the Association for the invitation extended to him to take part in the discussion. He thought there was a danger, in the consideration of eugenics, of falling into the error of regarding natural selection as a process always of a beneficent kind. In certain circumstances and under certain conditions this force could be the very reverse of beneficent to the community. If, for instance, the community allowed slum areas to exist, the operation of natural selection through adaptation must produce a population that could persist in no other way. In this case the surviving fit were not necessarily the best. Four generations had gone by since the industrial revolution drove the rural population into the town; four generations of survival by adaptation, and the systematic endowment of incompetents (a policy unfortunately indulged in by the State), had produced a community of the dull and the mildly incompetent who could probably survive in no other condition. Slums were the inevitable consequence of a system which endowed incompetence. Our present

knowledge justified no direct controlling efforts beyond the measures for the detention of the feeble-minded now before Parliament. The nation must put its faith in eugenic education, a wider knowledge of the laws of heredity, and such economic adjustments as could be secured to transfer the balance of fertility and survival from the least to the most desirable.

Sir James Barr, M.D., LL.D., made some observations on the duty of the medical profession towards the eugenic movement. He said that, although in the last few years the movement to encourage the improvement of the human breed had grown rapidly, he was sorry to say that, with comparatively few exceptions, the medical profession had not entered into it with any enthusiasm or given any whole-hearted support. The medical profession had been placed on a pinnacle, and its members were ever apt to proclaim that they were not actuated by those baser motives which they pharisaically supposed to guide the rest of mankind. The present movement, which was intended for the elevation of the human race, afforded an opportunity for maintaining the highest traditions of the profession. All real and permanent advancement of the race must be attained through hereditary laws. Unfortunately, the medical profession had been so permeated with Lamarckian ideas and so engrossed with environment that its efforts had been almost entirely devoted to the present generation without proper regard for the future. We were too apt to say, What has heredity done for us? The present generation was too often leaving a legacy of decrepitude and imbecility to the next, and that spirit was largely contributing to this process of degeneration. At one time medical men strongly held to the influence of heredity in the causation of disease; but with the discovery of the tubercle bacillus by Koch that fundamental faith was widely and deeply shaken, so that it largely disappeared as a tenet of belief, and even in the present day one met men who loudly proclaimed that heredity had nothing to do with phthisis. Those who prated about the conquest of consumption might find their campaign a paying game, but they were never likely to accomplish their ostensible object by their present mode of procedure. A race should be raised up which was more or less immune to disease and possessed a strong inherent power of recovery when affected. Measures to improve the physical condition of mankind were taken by many ancient nations. The Spartans and Zulus succeeded in raising magnificent races, but their methods were too barbarous for the present day. Might was right all the world over, and if this country was to retain a hold on its vast possessions it must raise a more manly breed, a better ruling stock than those which now directed the destinies of the empire. They should breed not only for physique, but also for moral and intellectual capacity. Sir James Barr quoted with approval an appeal to the medical profession by the Rev. D. T. Masson which appeared in the *Caledonian Medical Journal*, October, 1898. The address contrasted the care taken in the breeding of animals and the haphazard methods obtaining in regard to mankind, and concluded with these words, addressed to medical men:

> When it is a question of healthy or unhealthy children in the homes of your patients you are silent. You know the coming misery that is inevitable, but no word of warning is allowed to escape your lips. "Medical etiquette" is your Mrs. Grundy; she is chaste as the cold Diana. And when I remonstrate you only whisper, "Hush! how indelicate! how utterly unprofessional!"

Miss A. H. P. Kirby, the Secretary of the National Association for the Feeble-minded, said that every one must be convinced of the large part feebleness of mind played as a retarding influence in eugenics. There were very few problems in which the active co-operation of the medical profession was more necessary. In the present uncertain state of knowledge of heredity, the feeble-minded presented practically the sole instances in which the country had ventured to legislate on directly eugenic lines. Feeble-mindedness completely permeated the population in all ranks, and was likely, therefore, to affect the future more deeply than any other form of degeneracy, especially as it was frequently associated with all sorts of other neuroses and psychoses which proved transmissible. In view of its singular importance as a factor in eugenics, she was anxious to draw attention to the fact that, so far as she could ascertain, there were no facilities at present for the study of feebleness of mind in any course now open to medical students. If the Mental Deficiency Bill were passed, numbers of posts would be thrown open, requiring expert knowledge in this subject, and training would be necessary. But, apart from this practical consideration, it was when viewed solely as a field for research that the subject became one of primary importance. Here were new worlds to conquer in the study of its biological aspects, causation, and in tracing out the influence (if any) of Mendelism, or, again, to take more specialized forms, in dealing with the differentiation of types and their treatment. Another point in which it would be necessary to obtain the co-operation of medical experts was in instituting a proper standardization of the grades of mental defect. The present want of a common understanding was likely to vitiate any organized compilation of observations and statistics. The Association for the Feeble-minded some years ago persuaded the different authorities recording the after-history of children leaving special schools to adopt a unified statistical form for the purposes of comparison of results, and this was a step in advance, yet, unless medical authorities had agreed on the standard of the mental types to be dealt with, no educational or any other results could be effectively compared. However much one agreed with a writer in the British Medical Journal who, at the time of the Royal Commission, described efforts in definition as "a courageous attempt to define the undefinable," it was not impracticable to obtain a consensus of opinion on this point which would bring in view a series of working definitions upon which could be based some concerted action, and which would make an organized effort to obtain statistical results a possibility.

Dr. Dunlop described eugenics as almost entirely a question of the reduction of the present fertility of the economically and biologically unfit. When the Malthusian League was founded thirty-five years ago one of its leading points was that race improvement depended upon this reduction, and it appealed to the educated classes to spread the new knowledge of the control of reproduction among the poor. But it appealed in vain, mainly on account of clerical opposition. So the fitter classes continued more and more to limit their families, while the fertility of the poor and the unfit continued almost unchecked. Some people blamed the doctors for a good deal of this. But it was not easy for the medical profession to go ahead of public opinion. Fortunately, the Churches' opposition had been markedly lessening in the last few years. That medical men were only awaiting a public sanction to give advice freely on family limitation might be inferred from recent authoritative pronouncements. Dr. Dunlop quoted several of these and expressed the view that British public opinion was turning in the same direction. This, he urged, afforded justification for the claim that the medical profession should now take up the matter in the interests of the individual, the family, and the race.

Prince P. Kropotkin said that after having heard the eugenists he was not astonished to learn that up till now the British Medical Association had not been over-enthusiastic about eugenics. All that had been said in defence of eugenics was so unscientific. Natural selection was spoken of not as Darwin understood it, when, in his second great work, *The Descent of Man*, he considered it not as a struggle between all individuals of the same species, but as a struggle of the species against adverse surroundings (those species, he wrote, which contained the greatest number of mutually sympathetic individuals having the greatest chance of survival). Eugenists also said a good deal about "the elimination of the unfit," but no criterion of fitness was given. The two factors upon which the character of progeny depended were heredity and environment. To discuss the relative importance of these two factors would be useless. Medical men of experience would probably agree that the rate at which degeneracy was spreading in modern communities was so great that degeneracy could no longer be combated by any amount of "elimination" of the degenerates. The inhabitants of the slums were a reserve army, without

which British industry could not live and give the profits it was giving. What was needed was the elimination of the conditions which produced every year hundreds of thousands of those whom eugenists describe as "the unfit." Medical practitioners knew it well, and the British Medical Association was quite right in having hitherto given its chief attention to combating the causes of degeneracy by means of social hygiene.

Dr. CHARLES V. DRYSDALE thought the essential point to be recognized was that if natural selection was to continue to be a race-improving factor its selective elimination must not be prevented. The whole tendency, however, of humanitarianism, of Christianity, of medical and surgical science, and of hygiene, had been against this elimination; to preserve the diseased, the weakly, and the inefficient, and to permit their full rate of reproduction—thus preserving the evils of the struggle for existence, while eliminating its useful selection. The advocates of natural selection, therefore, must either candidly avow themselves anti-humanitarians, and allow the struggle to do its cruelly beneficent selection through death, or they must abandon the struggle altogether and imitate natural by rational selection. It became the duty of society and the physician to say, "We will alleviate your misfortunes or your disease, but, as you would not survive unless we do so, you ought not to have children to inherit your defects." This simply meant that the poor and those suffering from hereditary disease should regulate their families in accordance with their reasonable prospect of bringing up their children decently.

Dr. C. W. SALEEBY wished to speak of the influence of malnutrition upon future parenthood. There were racial poisons which could only be dealt with by "Preventive Eugenics," to protect future parents from malnutrition and genital disease. Hence there was no opposition between eugenics and medicine. Eugenists must recognize nurture, and realize that the medical profession in fighting malnutrition and disease was also serving fundamental eugenics by preserving the possibilities of future worthy parenthood.

Monsignor CANON JOHNSTON (Brighton) wished to take up one of Dr. Campbell's remarks—that the truths of science had not been incorporated into religious and ethical codes. In the Catholic Church there were various impediments in the matter of marriage, that is, the bar of consanguinity. This was extremely important, and concerned physical well-being. Two speakers had given the meeting a startling line of thought, and had done so very earnestly. They insisted that a real hope in eugenics was that instruction should be given to the people—the poor especially—upon economy in the number of a family. Public opposition to this was said to be moulded by the cleric. It appeared to be thought that the clergy simply took a professional standpoint, without research or thought. The opposite was the fact; the clergy could get a more intimate knowledge of working facts and a larger range of view than mere statisticians. Did the Creator design difference of sex to develop the beautiful quality known as love, or was it merely for the purposes of producing a strong offspring, leaving love to take its chance?

Dr. WYNNE (M.O.H. for Wigan) urged that as long as environment was bad, natural selection was not the ideal for the development of the race. Newborn babies continued to come into the world strong and healthy as a rule, and to aim at cultivating a race capable of withstanding the transitional environment of modern industrialism by the elimination of those unfit to survive it, would be a counsel, not of perfection, but of cruelty and stupidity. He believed that the efforts of the health authorities in attempting to reduce infantile mortality were justified by reason and science as well as by mercy.

Dr. W. ERNEST JONES (Inspector-General of the Insane, Victoria) expressed himself as bewildered by the apparent contradiction between the eugenic and the medical standpoint so far as the cure of insane people was concerned; it would seem that the endeavour to obtain a high rate of recovery was calculated to operate against the acquisition of a sound and mentally healthy race of individuals. Whilst admitting the potent influence of the neuropathic inheritance, he emphasized the ill effects of syphilis and alcoholism in the production of mental defectives and disorders, and quoted statistics culled from the Lunacy Department of Victoria to show how greatly syphilis was a cause of idiocy and imbecility, and the excessive indulgence in alcoholism in the parents a potent factor in the production of cases of dementia precox in the children. On the question of consanguineous marriages, he expressed the opinion that such unions were peculiarly disastrous in those cases where there was a family history of insanity, alcoholism, suicide, etc. Whilst recognizing the broad truths of the eugenist's doctrines, and admitting the necessity for the education of the people in this matter, he trusted that other equally great, and possibly greater, causal factors in the production of degeneracy would not be lost sight of.

Mrs. ARTHUR C. GOTTO, Honorary Secretary of the Eugenic Education Society, invited medical men to fill in a form for tabulating family histories.

Dr. STEWART MACKINTOSH, replying for the readers of papers, remarked that the general tone of discussion dealt rather with elimination of the lowest than preservation of the highest types. Eugenics proposed to safeguard the welfare of future generations. Thus it must beware of eliminating what might prove the requisite type for survival in a later generation. Sparta practised stringent eugenics, but nevertheless degenerated (as was now held by many anthropologists), because it was mainly an immigrant race from the north. If natural selection were limited men were brought back to the animal. By his very character man was getting away from Nature as fast as he could, carving his way step by step instead of following the stream of Nature. It was only when he tried to take too long a step that he fell.

DISCUSSION ON CRIME AND PUNISHMENT.

OPENING PAPERS.

I.—JAMES SCOTT, M.B., C.M.,
Late Governor of H.M. Prison, Holloway, London.

THE HISTORY OF CRIME AND PUNISHMENT.

MOST of the problems of sociology are complex, but few, if any, are more complex than the great questions of crime and how to deal with criminals. Innumerable discussions have taken place about them, and they have given rise to a very extensive literature. There are still, however, great differences of opinion concerning them, and there is room for further discussion. An important step was taken when the First International Penitentiary Congress was held in London in 1872. Many representatives from England and abroad took part in the discussions. These congresses are now held every five years, in different countries. The next one (the ninth) will be held in London in 1915, under the presidency of the very able Chairman of the English Prison Commission, Sir Evelyn Ruggles-Brise. When the transactions of the two London Congresses, 1872 and 1915, come to be compared it will be found that great changes have taken place in the interval. The authorities have not been idle. Some people think the changes have not gone far enough, but responsible authorities must move cautiously. Some of the alterations advocated by certain people from time to time might, if carried out, lead to the expenditure of large sums of public money and afterwards prove hopelessly impracticable.

I shall not add to the number of definitions of crime that have been given, but shall adopt those of others. Shirley gives the following: "The word 'crime' is usually applied to such a violation of the law as is, in protection of the interests of the community at large, visited with punishment." Nuttall defines punishment as "pain or suffering inflicted by authority on a person for crime." I think it will be generally admitted that crime is an offence against social order.

The view has been sometimes enunciated that crime

is a disease, inherited or acquired, and that criminals should be pitied and not blamed, put under kind treatment and not punished. There is certainly an analogy between crime and disease. Both are departures from the normal; both may receive benefit from proper treatment, but the same treatment and the same dosage does not always produce the same results. Some criminals, like some sick people, may act as foci of infection to others, and require treatment apart for the safety of the general public; both may require after-care and help; with regard to both the old maxim holds good that "prevention is better than cure." Preventive medicine may be considered the highest and most generally useful branch of the medical art, but it has not yet abolished disease, and individual cases still require treatment for their own good and the good of others. With regard to crime, by all means let us employ all the preventive measures we can by improving social conditions. We are likely, however, to have criminals among us for a long time to come, and society will have to protect itself by dealing with them in some way. It is difficult for most of us to think that the cold-blooded assassin or poisoner, the professional burglar or housebreaker who does not always hesitate to take human life if he is interrupted, the person who commits clever and carefully calculated gigantic frauds, whose crimes originate in sheer selfishness and often cause terrible suffering to innocent people, should be pitied and not blamed, and be treated better than many of the honest and law-abiding people can afford to treat themselves. While we all greatly rejoice in the great amelioration in the administration of the criminal law, and wish to see as many criminals as possible reformed, so as not to need punishment, yet we should avoid mawkish sentimentality. Public opinion has great influence on the people of wicked dispositions and weak moral principles who are prone to commit crimes, and they are quick to appreciate it. A healthy public opinion, which loves order and deprecates crime, is a most important factor in social well-being.

Much has been said and written as to what is the real object in inflicting punishment for crime. In early times the avowed object was personal vengeance. Many think that in a well-governed country the personal element should have no place, but that the offender owes some retribution to society for having broken its laws. Expiation was also considered an important object formerly. Intimidation has also been considered as being important. Very many now hold the view that the great object aimed at in punishing is to protect society, and, as far as possible, to deter the offender and others from committing similar noxious acts against society. Though, strictly speaking, reformation is not part of the punishment, there is in most countries now a strong desire to do all that can be done to reclaim criminals by bringing good influences to bear on them while in prison, under probation, etc. If this can be done efficiently, it is the most satisfactory kind of deterrence.

When we come to consider the question as to who should or should not be held responsible at law for crime we find ourselves face to face with a large and difficult subject. The law regarding insanity and crime is not in a very satisfactory state. Lawyers and medical men not infrequently differ. In some cases insanity, and the degree to which it has developed, are largely matters of opinion; no mathematical proofs can be adduced. It is to be hoped, however, that improvement in the law may take place before very long. Suggestions have been made as to having medical assessors at trials, etc., but there are difficulties as to carrying this out.

Delirium tremens is looked at in the same way as insanity. Drunkenness short of this is held at law to be an aggravation, but, if it can be shown that at the time of committing the act the accused person was in such a state of intoxication as to be incapable of forming any intention, this may tell in his favour in reducing the crime.

The question of partial or attenuated responsibility has been much discussed. Although the written law does not recognize it, the usual practice is to make some allowance for weakness of mind. These weak-minded criminals are a source of danger to the community, and great trouble to all the authorities. They cannot be properly controlled by their friends or by probation officers. If sent to prison the sentence is usually a short one, and they are soon out again to do more mischief. In prison they have to be treated differently from other prisoners, and this interferes with the discipline. They also give much trouble by their conduct. It is hoped that it may soon be possible to make better arrangements for dealing with them.

Time will not permit me to go into the vexed question as to whether crime is diminishing or not. Fluctuations take place, and the character of prevalent crimes changes a good deal; but it is to be hoped that there is a real diminution, and that it will continue. Changes in criminal law and administration affect the statistics and make comparison difficult. It was thought by many that the spread of education would have a great effect in checking crime. It has probably had some effect in this direction, but one is almost more struck with the changes it has introduced into the nature of crimes, and the methods of criminals. If we have fewer cases of offences against the person with violence, we have a larger number of clever and ingenious frauds. The professional criminal gets great help from science in carrying on his avocation. Electricity, chemistry, etc., are called in aid, and he gets great assistance from the blowpipe, acids, etc.

In dealing with criminals it is generally admitted that speedy and certain detection are among the most important factors as regards deterrence. I think our English detective force compares very favourably with the forces of other countries. When a serious crime is committed, and no person is arrested for it, some persons are ready to judge the police unfairly. They do not know all the circumstances. Sometimes the police are practically certain as to the criminal, but cannot get the necessary evidence of guilt to justify an arrest. The police, like the criminals, try to get all the help they can from science. The telegraph, telephone, motor vehicles, etc., are all useful. Great help in identification has been got from photography. The very clever system of anthropometry of M. Bertillon, introduced into police work in Paris about 1880, has been of great value. A modification of this system was adopted in England and used for some years. It was superseded by the finger-print system in 1901. The finger prints are more easy to obtain, and give better results. This method is now used in many other countries. The system of classification generally used was the invention of the able Commissioner of Metropolitan Police, Sir E. Henry. The impressions are made by the ridges on the pulps of the fingers. As these are said to be practically unchangeable from the sixth month of fetal life till death, and the chance of the prints of any two persons corresponding sufficiently to lead to error is almost infinitesimal, the value of the system is great. Old criminals sometimes try to make the finger prints unrecognizable by scratching the pulps of all their fingers, but this ruse seldom succeeds in its object.

In the last number of a French scientific journal, *Les archives d'anthropologie criminelle*, there is an interesting account of another method which has been recently introduced, and is said to have been used with success in the Police Laboratory at Lyons in France. This method is called "poroscopy," and is founded on impressions of the pores or orifices of the sweat ducts of the finger pulps, instead of the ridges. These impressions are photographed and greatly magnified. Observation is made of the forms, size, position, and number of the pores, which are said to vary in different people, and to be practically unchangeable in the same person. This method is said to be of special value in cases where the ordinary finger impressions on drinking glasses, etc., are fragmentary, blurred, or defaced from scars, etc. It has been suggested that if finger-prints were put on bills and other business documents, it would greatly simplify the procedure in cases where the signature is denied.

In dealing with suspected people before conviction, English law is very careful to enforce the observance of individual rights. In the introduction to the fifteenth edition of the excellent *Police Code*, Sir Charles Mathews, the Director of Public Prosecutions, gives the following advice:

> When you take a man into your custody, take him into your care, and befriend him to the utmost your duty will allow. Whether he is innocent or guilty, he is entitled to your protection, and innocent he must be assumed to be until his guilt has been declared by a competent tribunal.

The history of punishment for crime in past times is not pleasant reading. Great severity was the rule. Efforts were made from time to time to mitigate the punishments, but there was no steady progress in this direction. In the eighteenth century we find signs of a new epoch commencing, due largely to the effect produced by the writings of Beccaria, Bentham, and others, and also to the noble work of John Howard. Progress was not very rapid, but during the last 100 years many great changes have been introduced.

It was in 1808 that Sir Samuel Romilly brought in his bill to do away with the death penalty in cases of small gravity. This has led up to a very great change in the criminal law, and now the death penalty is practically only used for bad cases of murder. The Act of 1868, which abolished public executions, was a great improvement.

Mrs. Elizabeth Fry began her great work at Newgate Prison in 1813, and this was productive of much good. For many years, however, the state of the prisons still left much to be desired.

Transportation, which was often attended with frightful abuses, was abolished in 1857, and confinement in the "Hulks" was given up at the same time. The system of penal servitude was begun in 1853. Flogging has been administered less and less, and is now only given in bad cases.

A very important change was brought about by the Prisons Act of 1877, which transferred all the prisons to the Government. This has led to uniformity in control, and has been productive of great benefit. Numerous changes have been made from time to time. The treadmill, cranks, and other forms of unprofitable and irritating work have been replaced by industrial labour. The system of separate confinement has been gradually modified and associated work introduced. Religion and education have received much attention, libraries have been greatly improved, occasional concerts have been allowed, the dietary has been improved, hygiene and health have had much attention, young prisoners have had regular drill. Attempts have been made to classify offenders as much as possible. Great assistance has been rendered by discharged prisoners' aid societies and other benevolent organizations, and the visiting ladies have done much for the female prisoners.

Among the most important of the changes must be mentioned the "Borstal system," started by Sir Evelyn Ruggles-Brise some years ago and gradually extended. If crime is to be diminished, the most useful work is likely to be the care devoted to young offenders. The Borstal system has done excellent work, and seems likely to do more in the future.

Another important change, which has not been in operation for long yet, is the preventive detention of habitual criminals in a special institution. Judges and others have long expressed a wish for such a system. It is hoped that it may prove very useful in diminishing professional crime.

One of the most important of the changes in the methods of procedure, which has been gradually extending in our criminal courts of late years, is the consideration of the criminal more than of the crime. I think the late Cesare Lombroso did a good deal to advance this improved and just manner of procedure.

II.—C. A. Mercier, M.D., F.R.C.P.

THE ORIGIN OF CRIME.

Crime is a consequence of the social state. A person living in solitude could not commit a crime, any more than a man in an arid desert could drown himself. Each action would be prevented by the absence of a necessary condition. It has long been felt, and often said, that a crime is an offence against society, and though this is true, it needs a good deal of amplification and interpretation to make it express the whole truth. As it stands the saying that a crime is an offence against society means little more than a crime is a crime. Kant advised us so to act that our conduct might be a law to all men, and from this we may easily extract the notion that it is wrong to do that which, if every one did it, would be destructive, or at least detrimental, to society. This is a test by which we may always decide whether an act is right or wrong; and, moreover, we may fairly divide wrongful acts into two classes of greater or lesser gravity—into crimes and offences—according as they would, if universally practised, be actually destructive to society, or merely detrimental, without danger of destruction. It is evident that if homicide or theft were to be practised by every one on all available occasions, social life would be impossible, and man must become solitary; and it is evident also that if we all allowed our chimneys to catch fire or drove in the dark without lights, society would not be broken up, but would suffer manifest detriment. A crime or a wrongful act must harm some one, or it is neither crime nor wrongful; and thus we return to the original thesis, that crime is a consequence of the social state.

There are three ways in which an act may be injurious to society and to the social state. It may attack society directly by striking at its basis, or embodiment, or representative, or fabric; it may attack society indirectly by striking not at society as a whole, but at some individual member or members, and so tending to break it up piecemeal, by a process of attrition; or it may attack the future welfare and strength of society by striking at the racial principle, and diminishing the necessary supply of future members to take the place of those that must, in the course of nature, perish.

In thus defining crime as that which is destructive or detrimental to the social state, I do not in the least conflict with the definition that I have given in another place, in which I have stated that crime is that which is punishable by law; for the fact is that the law is founded on the principle of social preservation, and although it is not in the least likely that law-makers have, or ever have had, this principle articulately or formally before their minds when laws were being made, yet it is certain not only that the preservation of the social principle is, in the last resort, the justification for every law, but also that the instinctive repugnance that we feel against certain acts, and that leads us to place such acts under the ban of the law, arises from an instinctive appreciation that such acts are antagonistic to the social principle, and, if permitted and allowed to prevail, would be destructive of society.

When we hear people advocating the maintenance of law and order, we know that what they mean is the maintenance of the social principle—of the fabric of society as it is—for without what is vaguely termed "law and order"—that is to say, the machinery for maintaining the fabric of society, and suppressing assaults and injuries to society as a whole and to its individual members—society, as at present constituted, would dissolve in anarchy.

In order that people may live together in a society, they must have some motive to come together and some motive to keep together, and this is supplied in the first place by the natural, inborn, instinctive desire that each one has for the society of his fellows—the natural, inborn, instinctive aversion to continued solitude. Once they are aggregated into a society, the enormous and overwhelming advantages of the social state will secure the survival of those societies that cherish institutions favourable to that state, and the extinction, sooner or later, of those that fail in this respect. Whether the members of the society recognize that their laws and customs, or that obedience to their laws and customs, are advantageous to the preservation of the society, does not matter in the least. That obedience, those laws and customs, will be equally advantageous, whether the advantage is recognized or no, and hence it is that obedience to the law is enforced long before it is recognized that such obedience is necessary for the preservation of society, and long before it is explicitly recognized that the preservation of society is desirable. To the welfare and to the existence of society it is much less important that the laws should be good than that they should be obeyed, and if necessary enforced. Hundreds of communities have survived and prevailed under bad laws that have been enforced; but no community could long exist under the very best of laws if the laws were not observed.

If, then, crime consists in acts that tend to the destruction of society; and if man is not adapted to any mode of life other than the social life, how is it that he has criminal propensities—that is to say, desires to do that which tends to destroy the only mode of life for which he is adapted? In other words, What is the

origin of crime? We find that all other animals, yes, and all vegetables, are adapted to a certain mode of life; and as long as this mode of life is open to them they live equably in harmony with it, and do not suicidally attack those very conditions that make life possible, or at least most advantageous to them. Man is not the only animal that lives a social life: he shares sociality with innumerable kinds of animals, ranging from the elephant to the ant; and to some of these animals the maintenance of the social state exacts far greater sacrifices than man is called upon to make. The wasp, the bee, the ant, the termite are compelled to surrender the most primitive, the most fundamental, the most dominant and imperious of all instinctive desires, for the maintenance of the society to which they belong. They forego the joys of reproduction and parenthood, and remain throughout life celibate and childless, the slaves of the community. The sacrifice demanded of man in remaining free from crime is trivial in comparison, and yet of this sacrifice he is often incapable. Why is this? How is it that his nature, his instincts, his desires, have not attained the same perfect adaptation to his social state that has been attained for theirs by the petty insects that he is apt to despise? The reason is not far to seek, and lies in this—that immeasurable as seems the time during which man has been socialized when that time is compared with a single human life, it is but as yesterday to the number of generations during which the social insects have been socialized. Their socialization is complete, and is complete by reason of the innumerable generations during which the process has lasted. Man's socialization is as yet imperfect, because by reason of the comparative recentness of the attainment of the social state, the instincts and desires that served him in the solitary life have not yet been completely subordinated to the social desires or brought into harmony with them. The solitary instincts—that is to say, the selfish instincts and desires—are still insufficiently subdued; and when they conflict, as they must sometimes conflict, with the social instincts, the victory is sometimes gained by selfishness, and then the result is crime. The root of all crime is the determination to obtain gratification for oneself regardless of the cost to others

Treason stands in a class by itself. By treason is meant a direct attack upon the fabric of society, by breaking up or damaging the governing body, or some integral part of it. Such crimes are rare in these days, and are usually of a petty description, and may now be neglected. Anarchism or nihilism is a refusal to obey the law as law. It is not a protest against this or that law as unjust or tyrannical, but a violation of law merely because it is law, as a protest against all laws together. Such action is the gravest of all crimes, for it is of all crimes the most subversive of the social fabric; and society is bound by the principle of self-preservation to suppress it at any cost. The anarchist freely avails himself of all the benefits that arise from his membership of a community. He enjoys all the advantages, all the amenities, all the luxuries which are rendered possible by the social state alone, and even avails himself of the protection of the representatives of the law to save him from the righteous though crude retaliation of his fellows; but he tries to destroy all these advantages by destroying the social system that alone makes them possible. He is in the position of a man who cuts the rope that saves him from falling into the abyss.

The vast majority of crimes are of a private character—that is to say, are directly hurtful to individuals only, and injure the State in detail, and only in as far as they diminish, it may be by an infinitesimal amount, the general welfare; but it is manifest that if this mode of action were to become universal, or even general, society would be impossible; and therefore they are, as far as possible, prevented and punished. To this class belong all crimes of self-seeking by violence and dishonesty.

Lastly, there is a small class of crimes that are looked upon with peculiar abhorrence, and punished with great severity, although they may injure no one, and although it may seem at first blush as though some of them concerned no one but the parties to them. These are the sexual and racial crimes, such as rape, infanticide, procuring abortion, and unnatural offences. It is clear that society, as it exists, is not injured by any of these except the first. An infant or a fetus the more adds nothing to the welfare of society at the moment, and may even be considered a burden and a disadvantage, since to some extent they both of them must hinder the mother from serving society in other ways. What makes these acts crimes, and crimes that are recognized to be extremely heinous, is that they offend against the racial principle. They go to limit the replenishment of the social body by new units to take the place of those that grow old, lose their social value, and die. It is very improbable that any such realization of what the consequences of such acts would be if they were to become universal or general is articulately present in the minds of those who look upon the acts with abhorrence. It is extremely unlikely that they would assign as a reason for their abhorrence the destructive effect of such acts on the future of society. Nevertheless, it is clear that but for this instinctive abhorrence they might easily bring society to an end in the course of a generation, and therefore the repugnance and abhorrence that are generally felt against them are sound and healthy instincts, which have a high value in social preservation, and therefore have been cherished and intensified by natural selection.

If this view is right—that crime consists of acts that are destructive or detrimental to society—then it is clear that society must suppress crime or itself undergo dissolution; and since men are now unfitted to live except in societies, it is the imperious interest of every man that crime should be suppressed. Again, if crime is due to the dominance and preponderance of selfish over social desires, and since we know of no certainly effectual means by which the one set of desires can be diminished or the other increased, our power over crime would seem to be limited; but we have a resource. By rendering the result of crime detrimental and unpleasant to the criminal, we can enlist his selfishness in the interests of morality, and induce him to do that for his own sake which he would not do for the sake of his fellows. It follows that crime should be punished; that the consequences of crime should be made unpleasant; that the criminal should be made to suffer. Reform him by all means if you can; but remember that he is *ex hypothesi* an extra selfish person, and that the surest, if not the only, way to reform him is to show him that crime does not pay. If you treat the criminal, as some soft-hearted sentimentalists desire us to treat him, by telling him that he is not a scoundrel, but an ill-used, misunderstood unfortunate; and if you make prison life on the whole, or in many respects, pleasanter than the life that he can lead honestly at large, you must not wonder that the statistics of crime increase; and according to the most trustworthy accounts they are at the present time increasing.

III.—Sir Bryan Donkin, M.D., F.R.C.P.

THE STATE PUNISHMENT OF CRIME.

In the preface to a recent book entitled *The Rationale of Punishment*, the author, Dr. Heinrich Oppenheimer, claims a place for his work by saying:

> The State punishment of crime is constantly cited before the tribunal of Science in order to show cause why it should not be eliminated, like other relics of barbarism, from the arsenal of modern civilization, in which there is no room for mere superstitions of the past.

Although I am unable to regard the writings to which, I suppose, Dr. Oppenheimer alludes in so serious a light as he appears to do, and consider them rather as mainly the outcome of half-knowledge and sentiment, I wholly agree with him if he means that much of the modern literature on this subject which is readily absorbed by the public from works on criminology, novels, plays, newspapers, and magazines, tends to favour certain academic doctrines that question or deny the right of the State to punish criminals. On the one hand it is taught that crime is the result of a vicious social "system," on the other that criminality is a disease of individuals, and on both that the criminal is as irresponsible and pitiable for his crimes as a patient with fever for deeds done in delirium.

In illustration of some such pronouncements on criminal matters as those to which I have referred, and of their probable effects on both the general and criminal public, I may give the following instances.

A popular novelist, Mr. Tighe Hopkins, writing with apparent gravity about crime and punishment, states categorically that "imprisonment as a punishment has failed"; but, when denying that the punishment of flogging had put down "garrotting," he argues that this crime was stayed "by the ordinary law with its ordinary punishments."

Again, a prisoner who was reported, after expert examination, to be sane, pleaded recently before the court, in excuse of punishment for a crime which he admitted, that "all men were irresponsible and unable to help what they did"; and only a short time ago a convict, who in his intervals of free life was a great reader of current literature on crime, assured me that all his misdeeds were due to his having inherited his constitution from a drunken father, and that he was therefore himself irresponsible.

Lastly, a more or less educated habitual criminal told me that it was well known that society made the criminal, and that therefore criminals were not responsible at all. It is, indeed, remarkable how readily many people, including criminals, espouse these opposite dogmas on the origin of crime, which, while crediting such origin exclusively either to natural destiny or to the fault of society, or—to use the popular and confusing phraseology of the day—either to "Nature" or to "Nurture," agree in the conclusion that it is illogical and unjust to punish the criminal.

Before submitting to you a few practical questions for discussion, I am forced, both by the complexity of the subject and by the time limit, to adduce some preliminary postulates, based largely on my own study and experience. These I recognize as contestable, but nevertheless consider pertinent and even necessary as postulates to the proper discussion of the questions with which my paper ends. For my temerity in thus relying on the temporary acceptance of my demands I must ask your indulgence.

In making the following assumptions I waive all detailed discussion as to what *are* and what *should* be the precise motives and aims of the State in dealing with crime. These aims and motives have, I believe, always been, still are, and must continue to be, of a mixed and shifting character, varying with time and circumstance.

1. I take it for granted that the State, or society in its corporate form, is justified in coercing law-breakers, that is, persons who commit certain acts deemed to be antisocial, and forbidden on the part of the State by enactments provided with legal sanctions; and that this justification is established, even if such coercion be expressly directed only to the protection of the community and to the deterrence of others who may become law-breakers.

2. I assume that the actual conviction and treatment by the State of persons guilty of law-breaking should be regulated with regard not only to the degree of harm or menace to society involved in the crime, but also, as far as practicable, to the character and conditions of the individual criminal. The last part of this assumption is based on the recognition of the fact that, generally, modern humanity disallows the infliction of more pain than is necessary or expedient.

3. I assume that the dialectical question of "free will" *v.* "determinism," which, in my opinion, fills much useless space in many of even the ablest treatises on criminology, and especially marks the literature of the European and American continents, does not, with certain exceptions, seriously concern the practical penologist. I must, however, explicitly omit from this criticism the sound and thoughtful writings of the great French jurist, M. Tarde. I hold that the Legislature is no more deeply concerned with this eternal dispute than the actual conduct of most sane men is influenced by their views on idealism and realism, on mechanism and animism, or on the concept of causation. In practical life sane men act on the assumption of "free will," of the "reality" of themselves and others and the external world generally, and of causation as meaning something more than a mere sequence of impressions, however strongly they may adhere, when at their writing desks, to opinions which conflict strikingly with their everyday actions.

4. I assume that all men are potential law-breakers, even as they are potentially subject, and often yield, to temptations of putting their individual interests before the general welfare of society in many matters where their actions would not be regarded by contemporary opinion as "criminal" in either the proper or popular sense of that word. *There is no "criminal type";* and all formulated doctrines of "hereditary crime" are gravely misleading. A marked degree of mental defect, signalized otherwise than by commission of crime, doubtless characterizes a notable proportion of actual law-breakers; while on the other hand there are many persons who commit serious crime, but to whom the word "criminal," in its popular and untechnical sense, presently to be noticed, does not apply. I believe that most people could easily be trained in appropriate surroundings to be habitual criminals of one kind or another, whatever their innate capacities might be. Although I am not now proposing to discuss this question further, I recognize that my opinion on this matter may be challenged by many, including Dr. Mercier, who apparently distinguishes an unborn criminal "nature" or "character" from a "nature" that is "moral" and law-abiding, alleging that in the one self-indulgence overpowers the social *instincts*, in the other the social *instincts* overpower self-indulgence. He also holds, in logical harmony with his biological creed, that "the sense of duty" is innate.

I must now dwell shortly on the meanings I attach to the words "punishment" and "crime," for in most writings on this subject, ancient or modern, informed or ignorant, there is a prevalent lack of definitive use of these words, and a frequent attribution to them of different or equivocal meanings for the purposes of argument. I mean here, by the title of this paper—the State punishment of crime—the infliction of suffering by society on its members who transgress rules sanctioned by itself for its own protection.

The word "punishment" thus connotes the original meaning of the word—namely, the infliction of *pain* or *suffering*, no matter what the avowed object of such infliction may be. I intend to emphasize this as not only the right use of the word, but also as the actual use now current, in relation to the State's coercion of offenders against the laws. The element of retaliation—the notion of the justice of the offender's suffering—enters essentially into the judicial and social concept of punishment, however prominent or latent that element may be from time to time. This point has been insisted on with convincing force and clarity by Dr. Mercier in his work on *Criminal Responsibility*. Most writers, however, fail to admit that if even the most humane of modern societies did not both desire and justify some retaliation on the individual criminal, their very humanity would hesitate to sanction some punishments which are now deemed by them absolutely necessary for the deterrence of others and the welfare of the State. And further, most writers, including those who admit this contention, seem often to forget that, as a matter of fact, the infliction of pain or suffering of some kind is, and must inevitably be, an element in the carrying out of all measures involving the coercion of criminals, regardless of the expressed object of such coercion.

It follows, therefore, that those who hold that the sole admissible object of the State in dealing with crime is the reformation of the criminal should either explicitly admit the infliction of suffering as an instrument of reform or should explicitly disallow "punishment" altogether and discontinue the use of the word. Study of many writings on this subject will reveal that there is much confusion of thought and expression on this point. Again, if those who hold the doctrine that the only object of the State's dealing with criminals is to reform them admit the existence of some irreformable or incorrigible offenders, they must deny the State's right to punish such men at all, or even to detain them, for the loss of liberty, as we shall see, is an important infliction of pain, even although it may be ordered only for the sake of society. Any State treatment of law-breakers, in fact, with the possible exception of merely moral or religious suasion, necessarily involves coercion, and does, *ipso facto*, inflict suffering on the law-breaker quite irrespectively of the object or motive of the framers or administrators of the law, and the sufferer certainly regards such treatment as the very essence of his punishment.

At the present day—in this country at least—the mere loss of liberty forms, undoubtedly, by far the most penal element in the State treatment of criminals, excepting, of

course, capital punishment. Next to it comes the imposition of labour of any kind on that particular class of prisoners whose "chief good," in common with that of many free men, is to do nothing at all. Many of these, indeed, if allowed to be idle, would fully realize their own conception of liberty, in despite of "stone walls" and "iron bars." But for all this, the loss of personal liberty which is necessarily involved in nearly all practicable methods of dealing with law-breakers is unquestionably the basic element in all modern penal systems; nor will it be doubted, I think, that the threat of such punishment alone, coupled with the certainty of its infliction in case of discovery, prevents the commission of countless offences against society. Prisons, though standing empty, would still be powerful deterrents. The risk of immurement would surely prevent the actuality of potential crime, even in that futurist community adumbrated by certain philosophers' dreams, in which the evolution of a new "sense of the State" is prophesied as the result of natural selection in accordance with assumed biological law.

As regards the meaning of the words "crime" and "criminals," I use these terms in relation to State punishment, as applying to the transgression of existent laws, apart from the questions of the genesis of the criminal or of the philosophical justification of the laws he has broken. I do not discuss the historical aspect of crime and punishment, or the really futile and absurd question of whether the criminal is born or made, believing that all human beings, good or bad, besides being "born," are, more than all other animals, and in virtue of their high birth, very extensively "made."

My confessions of faith having been thus made, the first question I propose for discussion is the desirability of the establishment of a further criterion than exists at present of legal responsibility for criminal acts.

This question was answered affirmatively in the report of the Royal Commission on the Control of the Feeble-minded, which appeared five years ago, and is being similarly answered now by the Government in the Mental Deficiency Bill, which is largely based on that Commission's recommendations. Scientifically, here and now, this question, for us, turns wholly on the meaning to be attached to the words "criminal responsibility." I venture to think that among the many works written on this question, the book entitled *Criminal Responsibility*, by Dr. Charles Mercier, is at once the clearest, soundest, and most useful of all. At the outset, as most of us know, he quotes as follows that distinguished and able jurist, the late Sir James Fitzjames Stephen:

> In all crimes the definition consists of two parts—the outward act and the state of mind which accompanies it.

Thus all crime, says Mercier, is, in part, a problem in psychology. Stephen justly complained that while, to the judge, the word "responsible" meant liable to punishment by the law as it is, to the medical man it meant something different—that is, probably, "liable to punishment by the law as it ought to be." According to Mercier, the term "responsibility" means the quality of being *rightly* liable to punishment; and he explains that he intends by this, "liable to punishment on grounds that commend themselves to be equitable and right to the common sense of the common man of this time and country"; or, in other words, "that appear to be just and fair to the ordinary man when they are explained to him." There should be nothing startling in this dictum to the thoughtful jurist; for in modern times it purports to be the basis of laws in general. And "law," though it rightly changes more slowly than "opinion," should and must, in the long run, follow on opinion. Dr. Mercier thus sums up his detailed and closely argued treatment of this question:

> Responsibility attaches to acts that are wrong—a wrong act is a voluntary act in which the actor seeks gratification by inflicting unprovoked harm upon others. Responsibility is the more undoubted, the more deliberately, the more frequently the will is concerned in the act.

I believe that this definition is generally applicable in the case of all law-breakers, including, of course, such persons as are not popularly looked upon as criminals; as, for instance, some who are often and vaguely called "political" offenders, and others who commit serious offences against society in the professed or sincere belief that they are doing service to their religion or to some other ideal object. But here I have especially in mind an important class of offenders against the law, now habitually tried and sentenced as fully responsible, or rightly liable to the punishments awarded to sane persons, who are, nevertheless, the subjects of marked mental defect, although not certifiable under the present lunacy laws. Among these are many habitual and dangerous criminals. Now, although in some cases of this kind there might be some difficulty in arriving at a just conclusion, I believe that it would usually be easy for a thoughtful student of sane and insane men to grade the "responsibility" of people of this class, after a careful investigation and consideration of each individual case, and after taking into account their general conduct apart from the special crime with which they might be charged. I do not say that this would always be easy to every one conventionally called a psychologist; but I foresee but little more difficulty in this respect than at present exists under the actual laws of lunacy. A large proportion of the persons to whom I refer are clearly of defective mind, and probably have been thus defective from the earliest moment of possible observation of their mental expressions. Here, surely, the careful and experienced psychologist can be of service to the practical penologist, both in securing that these mental defectives, though incidentally and inevitably undergoing pain from their coercion, shall not suffer more than is necessary for the social object in view; and also by contributing to the social safety and welfare by certifying these criminals as unfit for liberty, and thus putting an end to the present illogical, fruitless, and expensive method of dealing with them by frequently recurrent sentences of penal servitude or imprisonment. I would repeat that the observant study of individuals of this class, with which I have been familiar for several years, would render practicable their certification as not normally responsible, or, to use the French term, as of "attenuated" responsibility: this decision being based on the ground of sufficient evidence forthcoming from their *general conduct*, apart from the crimes in question, that the offences with which they are charged were not, in the fullest sense, *wrong* acts, according to the definition already quoted from Dr. Mercier's work.

The second question regards the State's function in relation to the reform of the criminal, apart from its function, already assumed, of preventing and limiting crime by coercion of offenders and by deterrence of others. Reformation, I submit, cannot be the sole or even the first object of the State in dealing with the criminal, unless it be held, as some "eugenists" and other enthusiasts seem to be preaching now, that the State must be "parental" in the fullest sense of the word, and, by attempting strict control of the lives and upbringing of all, should aim at the prevention of all misdoing, as well as at the restraint of those who are already criminal. Thus proceeding, the State, in my judgement, would ignorantly and disastrously rush in where the thoughtfulest and wisest individuals would justly fear to tread. But none the less I hold most strongly that, *even* if only for the object of prevention of crime, the State is bound, in the light of present knowledge and feeling, to take all possible opportunity to reform, by training, such potentially reformable offenders as many of the younger convicted criminals are known to be. Whatever we may think about the "free will" question, or whether we argue from the animistic or the mechanistic standpoint; or, even whether it pleases some, in common with a distinguished Continental professor, to seek illumination from such a definition of responsibility as "a function of the normality of the psychical neurones," we may all agree to believe in the greater educability, in the young offenders, of those still developing cerebral mechanisms which are at least necessary to mental expression and to the proper ordering of human conduct.

There is already considerable evidence to show that much good and sound work has been done in this direction, with very appreciable success, by the régime that has now been carried on for several years under the Prisons Board at the State reformatories for young convicted criminals, now widely known as the "Borstal institutions."

DISCUSSION.

Mr. A. O. JENNINGS, Registrar of the High Court of Justice, said he desired to select points on which the comparison of medical and legal views might possibly lead to some practical result. As to criminal responsibility, he did not object to all crime being regarded as "disease" so long as it was recognized that for some forms of this disease punishment was the appropriate remedy. The difficulty was to distinguish the latter cases from those in which there was mental disease in the popular sense requiring medical treatment and not punishment. On the question of criminal responsibility there was a long-standing difference of opinion between doctors and lawyers, the more difficult to adjust as on neither side had the position been stated precisely, fully, and authoritatively. He thought, however, that most lawyers would accept Sir J. Fitzjames Stephen's statement in his *Digest of the Criminal Law* as a reasonable summary of what the law was or ought to be, for it was not clear how far there was judicial authority for the whole of it. He suggested that if the Association would appoint a committee to consider this, and formulate any modifications it suggested, some practical result might be reached. He would also like to know the opinion of the profession as to whether the ultimate decision on the question of responsibility should be left, as now, to a lay jury after hearing medical evidence and under the direction of the judge, or whether doctors preferred some other tribunal. With regard to punishment, Mr. Jennings emphasized the point that, apart from the reasons already given why this should be made unpleasant to the criminal, the injured party would not tolerate that the whole matter should be taken out of his hands and dealt with by the State, unless he were assured that the latter would deal with it in a way that satisfied the general sense of justice; that if, for instance, a father whose child had been subjected to some cruel outrage knew that all that would befall the criminal was a period of comfortable educational discipline, he could not be prevented from taking the law into his own hands. The present system of punishment was at least a partial failure, mainly on the ground that there was too little discrimination, and that it contained too little of the educational element. He asked whether the medical profession did not think that in the case of the more serious offences, at any rate, the final sentence might not come at least for revision before a punishment board, which should have much fuller information about the prisoner and his history than would be likely to come out in the course of the trial. Lastly, he advocated an extension of the Borstal system to selected prisoners over the age of 21 years.

The Rev. C. B. SIMPSON, Chaplain-Inspector of H.M. Prisons, said that his intrusion into the debate was excused by twenty-five years' acquaintance with criminals. He deprecated the view that punishment had little or no deterrent effect. A man who had once lost his liberty was exceedingly anxious, as a rule, not to lose it again. Sentences of seven days' duration might not deter men of low type from getting drunk, but severer sentences of not less than one month instilled into the minds of the morally normal a very real horror of gaol. Mr. Simpson quoted various instances from his experience to show that capital punishment also had a deterrent effect in regard to the crime of murder. A letter which a convict in Australia had smuggled out of prison came into the hands of the authorities. It contained this pregnant sentence: "Out here they have taken to hanging a cove for bashing a warder. That bit of rope, dear Jack, is a great check on a man's temper."

Prince KROPOTKIN, who introduced himself as "an old gaol bird, having had ample experience of prison life in Russia and in France," asked the question, Are prisons answering their purpose? From what he knew of them, partly from inside experience and partly from the study of the literature of the subject, he declared that they were not. Worse than that, prisons were the universities of crime; criminals came out of prison ten times worse than they entered them; boy prisoners learnt in them vice and all kinds of wickedness. Imprisonment rendered men less and less fit for work; it destroyed energy and initiative. Prince Kropotkin alluded to the bad influence upon criminals of the knowledge that offences against society existed which the law did not punish. They often said, "The thieves are the men who sent us here," referring to the sweater and the adulterator in commercial walks of life. He regarded the efforts now being made, especially in the United States, towards substituting prevention of crime for its punishment as full of promise for the future. It was not sentimentalism but practical common sense which inspired these measures.

Captain ARTHUR ST. JOHN, Honorary Secretary of the Penal Reform League, said the public needed to be protected not only from criminals but from those who administered the law, and who sent boys to prison when they should not be sent there on any account, and sentenced women to seven days' imprisonment for drunkenness when quite different treatment was required. The first need was to understand the criminal, not in prison but in his social setting. To this end staffs of experienced probation officers were required, independent of police and prosecution, whose mission would be to deal with criminals from quite a different standpoint from that adopted by the authorities of the penal institutions.

Professor BENJAMIN MOORE (Liverpool University) took the view that the existence of crime was an essential factor making for good in society. Crime was to the community what the sense of pain was to the individual. Crime ought to form the indication of the need for treatment of social disease, and be the cause of modification of evil laws. If crime did not exist, many of the greatest social evils would never be discovered and remedied. If our forefathers had not during past centuries committed crimes and broken bad laws there would have been a lack of all progress. It might be argued that while this was true as regards political crime, no good sociological effect could be claimed on behalf of common crimes for which ordinary criminals were committed to prison. But here, again, the crimes were often the result of baneful social conditions, and almost impossible conditions of living which led to crime, and the repeated recurrence of offences was a continual call for social improvement. Crime was the detector of imperfection, and it was to be hoped that it would never cease, because it would mean satisfaction with an imperfect condition of affairs.

Dr. E. B. PASMORE, Medical Superintendent of Croydon Asylum, urged that there should be associated with the judge a medical assessor who had large experience of mental cases in asylums. When a prisoner was before the court for the first time the question should be considered whether or not he came into the mentally defective class or not. He had known many cases in which criminals, after they had been passing in and out of prison for years, were found to be defective.

Miss G. ALLEN said she had had experience of dealing with girls in prisons and had had personal experience as a prisoner herself at Holloway (as a suffragist). She did not wonder that prisoners were often returned to gaol; the lack of sunshine, and, in some prisons, lack of fresh air and sufficiently bracing exercise, had a seriously weakening effect on the bodies of the prisoners, especially the younger women, while the whole psychical atmosphere was towards weakening instead of strengthening the will. Miss Allen mentioned a curious effect which the lack of ventilation at Holloway, before it was improved as a result of suffragist complaints, had upon herself. Although she had always been a total abstainer, the atmosphere induced in her a tremendously powerful craving for alcoholic drink. If that were so in her own case, what must it be in the case of persons who already had a predilection for drink?

Mr. W. R. BISSCHOP, LL.D., Barrister-at-law, argued that crime was the necessary outcome of development of the social order. Crime could not be eradicated, but its excesses could be mitigated. Punishment of a criminal should be in harmony with the improvement of the

conditions of social life; criminal law was not so much the field for research by the lawyer as by the economist and the doctor, the psychologist and the psychiater. Administration of the criminal law ought not to be the exclusive privilege of lawyers, even if their training were of a special nature and included political economy and psychology as its main objects.

Mr. R. DIXON KINGHAM, Barrister-at-law, said that although he heartily approved the Borstal system and advocated its extension to adult offenders, there was one grave objection to it which should be removed. The qualification for admission to the benefits of the system was the commission of a crime. Honest lads did not obtain anything equivalent to the physical, mental, and technical advantages which the Borstal boy received as a result of the injury he had done to society. This objection would cease to exist if prisons were made self-supporting, since the prisoners would then pay for the superior advantages by their own labours.

Dr. OPPENHEIMER briefly traced the history of punishment of crime, and urged that its final object had always been, and still was, the protection of the community. The penal code exercised a moralizing influence upon the community at large, and thereby realized its final *raison d'être*—the immunity of society from the onslaughts of the criminal.

Dr. MERCIER, who was selected to reply for the three openers of the discussion, said that Mr. St. John had taken a hasty *obiter dictum* of a magistrate about the milk-cans as if it were a serious contribution to the discussion of crime and punishment. What the magistrate evidently meant was that the milk ought to have been put out of the reach of children; but what had that to do with the matter the Section was discussing? Mr. St. John's contention was that the case of every accused person should be gone into carefully by competent persons, the implication being that all the persons who now investigated such cases — police, magistrates, judges, juries, barristers—were all incompetent. Where was the competent person to be found? Mr. St. John let the cat out of the bag when he insisted that the persons should not only be competent but sympathetic; that is to say, Dr. Mercier supposed, that the cases of burglars should be inquired into by burglars, of pickpockets by pickpockets, and all by Mr. St. John. The prison system, Mr. St. John said, was defective, because it did not strengthen the will, but how would he have it strengthened? Would he subject the will to a course of Turkish baths and massage? Professor Moore extolled crime. It indicated, he said, a healthy community. Dr. Mercier did not know whether Professor Moore carried his principles into practice, but if so the police of Liverpool should certainly be informed. They might then be able to clear up the mysteries of certain undetected crimes. Miss Allen wanted to know why we do not find out about suicides and other criminals. The main thing was to find out who had committed crime, and if Miss Allen could give the police any hints to improve their methods of finding out, no doubt the police would be grateful. She complained about the lack of sunshine, as if criminals could be reformed by the treatment by sun baths, but surely her complaint should be directed against the regulator of the weather and not against the prison authorities. Finally, Mr. Dixon Kingham would make prisoners self-supporting, but he had altogether left Mr. St. John out of account. He forgot that prisoners would not like it, and if prisoners were asked to do what they did not like, Mr. St. John and his society would at once protest clamorously, and would be joined by all the other faddists in the kingdom. The suggestion was not practicable.

During the proceedings the meeting unanimously passed the following resolution:

> That it be recommended to the Council of the British Medical Association to appoint a committee of members of the Association, with power to co-opt others not members of the medical profession, to consider the present state of the law with regard to the legal responsibility for crime, and to issue a report with recommendations to the Council.

DISCUSSION ON HOSPITALS IN RELATION TO THE STATE, THE PUBLIC, AND THE MEDICAL PROFESSION.

OPENING PAPERS.

I.—BENJAMIN MOORE, M.A., D.Sc., F.R.S.,

Professor of Bio-chemistry, University of Liverpool.

THE subject of the future organization and work of our hospitals as part of a national system for the combat of disease should be considered in a threefold aspect—(1) in regard to the prevention of disease, (2) as to the treatment of disease, (3) as to the increase of knowledge of disease. These three problems are closely inter-related, and one of the greatest defects of the present mixed system of hospitals, partly under voluntary or charitable control, partly under municipal and partly under Poor Law control, is that all co-ordination of teaching and research and of prevention and treatment becomes lost in a process of drifting.

As a result all national character is taken from our hospitals, and the planning and execution of research into disease on some common scheme, the scientific diagnosis of disease in such an effective manner as sociology demands, the treatment of disease in the individual patient regarded as a potent factor in preventing the spread of disease in the community, combined with a rational control of the patient's movements and the education of a general intelligent attitude of the community towards disease as a primary sociological problem—all these are lost, and replaced by a patchwork of charity, of destitution relief, and of doctoring of symptoms as a palliative of the condition of the individual patient. The whole forms a system of evil administration, inadequate in some directions and wasteful and overlapping in others, which reflects but little credit upon a country which is supposed to lead the civilized world in matters of hygiene.

When any would-be reformer attempts to give advice as to how this muddle may be mended, the first cry he is met with from good, well meaning, and charitable people is that the glorious example and ethical training of charity and voluntary effort must not be weakened. This objector is a close ally of the municipal councillor who hitherto has attempted to bar the way towards the proper nutrition, hygienic supervision, and systematic treatment of the school child, by the cry of interference with parental responsibility and parental freedom to neglect the child.

The latter opposition is now being beaten down all over the country, and school authorities are rapidly establishing feeding and treatment centres. A little more education of the populace is all that is necessary to start a similar movement towards the replacement of our present heterogeneous hospital systems by a properly co-ordinated system with local public control at each district, unified nationally by a public health authority.

The beginnings of this movement are to be seen already in the applications being made to municipal authorities for assistance from rates in aid of powerful voluntary hospitals which have hitherto held their heads very high and disdained municipal or State assistance. A similar indication is to be found in the grants from the State for the education of medical students now made to London and provincial medical schools, which were originally founded on a purely voluntary basis, and supported by charitable contributions.

The Insurance Act in the near future, partially by the additional strain thrown on the voluntary hospital system, partially by the reduction in charitable donations that the Act involves, and partially by the fact that State and municipal funds are now available, and patients themselves are being taxed by non-voluntary contributions, will rapidly produce an increased rate of approach towards a national system of hospitals.

Now, it may be asked, will this approach have the effect feared by its critics of destroying the benevolence and high character induced by the voluntary system? Will charity and brotherly feeling and compassion for the suffering and friendless disappear from amongst us, because a national system of hospitals is established to form the centre and basis of operations in our modernized

system of treating disease sociologically as an abatable scourge of the community?

The point is not a new one; the argument has been advanced on all occasions when voluntary giving of money for some high object of our social life as a community has been first aided by financial assistance derived by taxing the community as a whole, and a brief examination of a somewhat parallel case may serve to indicate the rôle which voluntary gifts and charitable bequests might take in the future with regard to a national hospital scheme.

It is only within the past generation that our powerful modern municipal universities have arisen, some of them now possessing an annual budget of nearly one hundred thousand pounds, and these are all financially dependent upon just such a happy combination of voluntary aid municipal rates, State taxes, and payment of fees, as might be instituted in support of municipal or State hospitals.

When it was first proposed in Liverpool, Manchester, Leeds, Sheffield and Birmingham that the local university should go on the rates, there were the same wise shakings of the head that there are now over the question of the public control of the hospitals, and the same doleful forebodings as to the drying up of private charity. The wealthy merchant would no longer, it was said, endow Chairs, because he would say that can be done by the State or out of the rates, and so goodness of heart amongst the wealthy would be discouraged, and perhaps come in the end to be regarded as a vice rather than a virtue. The State, relying on the municipality, would withdraw Treasury grants or decrease them, and so only throw a bigger burden on the citizens; or the citizens crying out, "Let the State pay for education," would starve the baby university.

Happily all these gloomy prophecies have been falsified by the march of events, and our municipal and provincial universities have grown in numbers and in strength, and are now making themselves felt as a powerful national stimulus by the modern and democratic spirit they have introduced into higher education.

What the modern universities have done for education a modernized hospital system is capable of doing for the study, prevention, and treatment of disease, and its financial support will be as certain as that of the universities, and derived from the same types of resources. State, municipality, and private donor, will combine to aid one another in the evolution of the best, and their united best will be better than that of any one of these great forces acting alone, or all three acting separately, as they do at present.

There is distinct evidence at the present hour that the above is to be the line of sociological evolution of the future hospital systems in all the great municipalities, and country boroughs and rural districts will soon follow suit.

In a parliamentary bill which is being promoted at the time of writing by the city of Liverpool, powers are being taken to make grants to the funds of two voluntary hospitals, one of them the premier general hospital of that city. In the same city, at about the same time, an appeal to the charitable for voluntary subscriptions to raise £2,000, for materials required in the same institution for research and treatment, was made by a local newspaper and within three or four days the amount was over-subscribed and the list closed. Here, then, is the desired combination of voluntary subscription and municipal aid, and in the same institution receiving, or about to receive, both these types of financial aid, there are medical students being taught their profession, and on account of these students the university receives State aid through the Treasury grant, and this is utilized to support the clinical school from which the hospital in turn receives much aid in service.

It needs only an extension of this triple support to place our premier voluntary hospitals on a public basis, in part voluntary, in part municipal, and in part central or State, but in all three cases national in aspect and in proper co-ordination.

The second great bugbear in the minds of those opposed to municipal or State hospitals is the public control as opposed to the disinterested control of the finest and most lofty-minded citizens actuated by the noblest motives of religion and philanthropy. This also was feared in the case of the universities, and proved a groundless fear. The same lofty sentiments, the same high ideals of liberty, and service in devotion to the community, still sends the best citizens into the services of our municipal universities as called forth the men who first launched them as university colleges on a small and feeble scale, when as yet there was no municipal aid, and no Treasury grants, or any thoughts of such. The order of sociological development was the usual one in such enterprises—of a few enlightened minds starting a voluntary work to attempt the solution as well as might be, in a practical fashion, of some portion at least of a social problem requiring a solution but left neglected by the State—unseen, in fact, by the multitude of the ignorant.

Then, as this problem expanded and became too large for voluntary effort, its solution fortunately became obvious as a necessity to the community as a whole, and it passed into a State problem of the hour. Soon public funds became provided, as we have seen, for the continuance of the work on the greater scale.

Through just such a phase our hospital system is passing at present, and the veterans of the voluntary movement, are afraid of the new control that State support may involve, but they will be surprised at how little it will change the spirit of things, and at seeing hereafter the same men sitting on the boards and committees, only sent by other electorates and in other capacities. There need be no dislocation, no removal of the old and faithful workers of the voluntary movement, as the State says to them: "That which you did your best by dint of hard work to provide for one-fourth of the community has become recognized as such a valuable asset in our social system that it shall now be provided for all, and you who have been pioneers shall advise and direct us on behalf of the State as to how it may best be done, and pilot the State movement as you have learnt so well how to do by directing the voluntary movement."

It is perfectly sound sociology to say that where there is municipal or State financial aid, there must be a corresponding measure of control of policy by these public bodies; but in all communities, great and small, it is remarkable to what a considerable extent the personnel of the active public-minded citizens is the same on voluntary bodies and municipal communities, and often this desirable linkage is increased by the co-option of those fittest and most willing to serve on the committees. In fact, representatives of voluntary agencies are often elected officially as members of the council committees, and are amongst the most active members of those bodies.

The partial representation of the municipality on the governing bodies of schools, universities, and charitable institutions has yielded hitherto good results and more effective co-operation, and there is little reason to think such a combination would act otherwise in regard to hospital administration.

It will probably be admitted on all hands that, valuable as has been the work of the voluntary hospitals in the past, and useful as has been the example they have held up for the municipal and Poor Law hospitals which have taken up the large balance of work which the voluntary institutions could not touch for lack of funds, yet the voluntary system acting alone cannot solve the sociological problem of the treatment and prevention of disease amongst the whole mass of the industrial population. The pity is that all its ennobling influence should be shed upon one section of the hospital system while the other and numerically greater portions are left untouched, often to sink to a lower level, which invites an invidious comparison. What is needed is a unification and a spreading of the benign influence of this leaven through the whole mass.

This position, already quite clear to the thoughtful sociologist, will become intensified and apparent to all, at that early date when statesmen, realizing more clearly the nature of the problem that confronts them in disease as a whole, extend the operations of the national scheme against sickness to the women and children of the community. Also any reconsideration of the Insurance Act must take cognizance of the lack of provision at present for correlating the outside work of the physicians of the whole profession with the work of the hospital, and some mechanism will have to be provided for putting each practising physician in intimate touch with some

hospital, and providing him for his work's sake as well as his patients for their health's sake, and that of the community, with ready access to its wards.

The general expenses of equipment and running of the unified system of hospitals can only be provided by municipalities and State combined, at that not far distant date when all serious disease is treated in hospital, for it is much too great to be discharged by donations of the wealthy and voluntary collections from the poor. What, then, it may be asked, remains as the function of the voluntary contributor? It may be answered that here, as in the universities, scope may be given by providing from this source increased facilities for research and further advance in knowledge. Private donors can found Research Fellowships and Chairs; provide expensive *x*-ray and radium installations; subsidize investigations of particular diseases, such as is seen in our various cancer researches; build as fitting memorials elaborate suites of operating theatres; add comforts beyond those which the community alone can provide in the wards, for the well-being and comfort of the suffering and dying. It is simply a modern absurdity to argue that human nature will be changed, or deteriorated, because the State as a whole recognizes and performs its duty towards a national problem—the greatest, perhaps, in the whole realm of sociology.

But from the ordinary routine working of the hospital unit, as the local centre of the combatant system against disease, charity, as we at present understand hospital charity, must be rigorously excluded. The old conception of the charitable hospital as a place for the relief and palliation of disease (while these objects are still attended to) must be replaced by the scientific realization of the hospital as the pulsating life-centre of a little corps charged with the execution of an important task, namely, the maintenance of the highest degree of health in a given district, and correlated to similar corps or units all over the country.

The medical profession as a whole, instead of regarding the hospital as an institution where it gives the spare services of what ought to be its leisure hours for charity's sake, and to which it sends its derelict and unfortunate cases, ought to grow to regard the hospital as something with which in the entirety of its work it is knit up and organically connected.

The time is perhaps scarcely ripe for the detailed discussion of the size of the hospital unit and its exact correlations, but provisionally it may be suggested that, so far as present conditions allow of it, the unit of population served by a municipal or national hospital should average about 100,000. Such a hospital would require eighty to one hundred beds, and there should be a body of sixty to sixty-five medical men attached to it and giving it whole-time service in various capacities.

The work of the medical officers should be varied from time to time so that each acquired a full knowledge of the work. Some would be engaged in the hospitals as surgeons, physicians, pathologists, bacteriologists, and in charge of special departments. Others would be out part of their time as visiting doctors in the district, but all would be closely connected to the hospitals as a head quarters. The services of all would be available to all the citizens of the district, and as a corps they would be charged with health administration of both the individual and the environment.

Such a system can be demonstrated to be both more economical and more effective in its purpose than our present haphazard system of running medicine as a business concerned almost solely with the task of patching up the individual patient after disease has already made its inroads.

II.—I. G. Gibbon, D.Sc.,

Author of *Medical Benefit in Germany and Denmark*.

THE MUNICIPAL HOSPITAL IN GERMANY.

I shall treat mainly of the finance of German hospitals, but shall incidentally touch on some questions of organization. The task of dealing with finance is facilitated by an excellent report on a number of municipal hospitals which was issued by the Statistical Office of Düsseldorf in 1909. The various questions are there considered so carefully and exhaustively that, where possible, I have used the figures, even in preference to those of later date.

Before proceeding to consider details of finance it will be well to give a brief outline of the hospital system. Germany is well supplied with general hospitals. Public authorities provide and administer them as part of their ordinary work. In urban districts this is done by the municipality. In rural areas hospitals may be provided either by the *Gemeinde* (parish) or by the *Kreis* (rural district). The States assist in various ways. In Prussia the State builds and maintains the university hospitals, but does not assist local authorities in the provision of hospitals. In Würtemberg, on the other hand, the State renders assistance to local authorities.

There are many hospitals provided by religious and philanthropic bodies in addition to those of the public authorities. There are also numerous private clinics or nursing homes. Further, in estimating the total institutional provision, account should be taken of the numerous convalescent homes and sanatoriums.

The large increase in hospital provision has been due partly to general causes. A larger proportion of the people live in towns. The housing accommodation, even when good, often does not lend itself readily to the treatment of serious sickness at home. There has been a wave of feeling in favour of institutional treatment generally. The schemes of national insurance have added their stimulus.

The local council is, of course, the supreme authority in the case of the municipal hospital. Under it will be a committee, variously composed. The actual administration of the hospital may be in charge of a principal medical director. This is the system favoured by doctors. But it is not universally adopted. The medical director may be in charge of the medical work only, with a lay director in charge of the other branches.

The marked rise in the cost of providing hospitals has been due partly to extraneous causes. Prices and wages have gone up. The demands of medical science have also risen. Further, there seems in some cases to have been too little homage to economy. There are signs of a reaction; it is being felt that local rivalries in handsome buildings may be bought at too big a price, and that the ratepayer deserves to be remembered a little even when outside the hospital.

The expenditure on salaries and wages is a heavy item, and, with the cost of medical and surgical requirements, constitutes, without reckoning the value of board and lodging, from about one-third to two-fifths of the total, exclusive of capital charges and fabric maintenance.

There is wide difference in the number of employees and the expenditure on them. Thus in the group of hospitals to which reference has been made, the number ranged from 81 to 224 per 100,000 sickness days, the more usual being from about 100 to 200.

The differences in the number of officers employed extends to the medical staff. Thus in the same group of fifteen hospitals, the number of doctors employed per 100,000 sickness days (this is a better criterion than number of beds) ranged from 5 to 16, being from 8 to 12 in most cases. One German authority contends that an assistant medical officer is desirable when the sick number 30, and is essential when they number 50.

As to salaries, an inquiry made a few years ago showed that the remuneration paid to medical directors at twenty-four hospitals ranged from £125 to £600 per annum; in twelve of the cases pensions were provided, and in an equal number either a dwelling or a money equivalent was allowed. Assistants appear to receive from about £50 per annum to £100 per annum, with board and lodging; senior assistants receive more.

Salaries have risen—partly because of the difficulty of obtaining doctors, partly because of the activity of the doctors' organization, the Leipziger Verband. The Verband passed a resolution in 1908 that an assistant should receive not less than £60 a year, with increments of £10 a year, together with board and lodging.

The average expenditure on salaries (the value of allowances in kind is not included) in the group of fifteen hospitals to which reference has previously been made was between £150 and £200 at most places, but at some it was less.

Medical officers may receive remuneration additional to their salaries. Principal medical officers may engage in consultative practice. They may also be allowed to receive

payment for treatment from patients in the superior classes. Practitioners consider it unfair, under existing conditions, that they should be required to treat well-to-do patients in the hospitals without additional remuneration. Assistants may also receive some additional remuneration—for the treatment of patients in the superior classes or for certificates, for instance.

There are different classes of patients, according to rate of payment. Generally the classes number three, though at some places there are more. Better accommodation, food, and attendance are provided for patients of the superior classes; the food of a first class patient may cost three or even four times as much as that of a patient in the third class. It seems to be considered that patients of the first class should pay more than the cost of treatment and maintenance, that patients in the second class should pay about the cost, and patients in the third class less than the cost. The rates charged are at the discretion of the municipality, and differ widely in different districts. They range from about 6s. to 12s. a day for the first class, about 4s. to 7s. for the second, and 2s. to 3s. for the third. Children are received at reduced rates. Persons not domiciled in the town have generally to pay higher rates. Additional payments may have to be made for some special forms of treatment.

The main sources of income are the receipts for treatment and maintenance of patients and the long-suffering public exchequer. Some hospitals have endowments, but generally not large. The following are some of the principal facts which emerge from the scrutiny of a number of reports:

1. Much the largest number of patients are treated in the lowest class. This is to be expected. Insured persons and Poor Law cases are placed in this class. Insurance societies can give hospital benefit and do so freely. There are complaints: on the one hand, it is alleged that practitioners send cases too readily to hospitals; on the other, it is contended that in cases of dispute societies use the hospitals to break the outside practitioners, and a demand has arisen that at least assistant medical officers should make common cause with their fellow practitioners outside.
2. A very large proportion of the cases are treated at the charge of the Poor Law. Of twelve hospitals for which particulars were obtained, the proportion of the total number of days' maintenance of patients at the charge of the Poor Law was in five cases one-half or more, and was over one-third in four other cases.
3. The receipts in respect of patients, including those from the Poor Law, cover but a part, often but a small part, of the total expenditure. A large deficit has to be met from public funds. In a group of eleven hospitals, in two instances the receipts in respect of patients were less than one-half the expenditure (even excluding capital charges and fabric maintenance), and in another five instances were less than two-thirds. It has to be mentioned that the charges for patients in the lowest (and much the most numerous) class are considerably below current cost, roughly from about one-half to three fourths.

It is therefore obvious that the total amount to be met from public funds must be very high, including capital charges and payments made for Poor Law patients.

The brief particulars which have been given will indicate that the provision of public hospitals raises many difficulties, and the conditions in Germany cannot be said to be wholly satisfactory. It does not by any means follow that the system which has developed there and in other Continental countries should be adopted everywhere. National and local individualities and tendencies have to be taken into account.

III.—Professor WILHELM PFEIFFER,

Medical Superintendent of the Municipal Hospital, Essen, Germany.

THE GERMAN HOSPITAL IN ITS RELATION TO THE MEDICAL PROFESSION.

I WISH to express my appreciation of the honour conferred upon me by this Association in inviting me to address the meeting of the Section of Medical Sociology.

In 1909 the society known as the Leipziger Verband, which has for its object the safeguarding of the interests of the German medical profession, laid down a basis of what should be the position and salary of medical superintendents who devoted their entire time to hospitals. It was held that:

I. As regards official position—

(*a*) It is essential that the medical superintendent be not only in respect of medical questions, but also in general matters, the highest official in the hospital, and be entirely independent.

(*b*) As regards administration two methods are feasible, either for the medical superintendent himself to direct both the administration and the domestic management with the assistance of a lay official, whose rank would be inferior to his, or a board of management should be appointed.

(*c*) The medical superintendent should have an efficient staff, both lay and medical.

(*d*) Under no circumstances should the doctor be subordinate to a lay official, nor should it be possible for a lay committee or matron to act without the authority or independently of a medical superintendent.

II. Rank and emolument—

The medical superintendent should receive a fixed sum proportionate to the duties and be entitled to a pension increasing with the number of years of service. He should be allowed to recover fees for paying patients over and above the hospital dues.

In order to get a comprehensive idea of the subject we may divide German hospitals into three groups: (1) State hospitals, (2) municipal hospitals, and (3) private hospitals, many of which belong to religious orders. The State hospitals are usually attached to a university; they serve first and foremost for the education of medical students and for medical research. The principles of administration set forth above are not so well complied with in the case of the municipal hospitals as in the State hospitals. Still worse are the conditions in the private hospitals. In these the medical superintendent has the supreme control in only 12 per cent., in 86 per cent. he is subject to dismissal and has no pension rights; the salary ranges from £90 to £250 per annum. In the smaller hospitals where the duties only occupy part of the day the medical officer has a private practice, and is entitled to charge a fee to paying patients of the first and second classes. The relations of the general practitioner to the hospital are limited in the majority of cases to sending to the hospital patients whose treatment can be more conveniently undertaken in an institution than at home; but in small hospitals of the private class general practitioners often treat their own patients in the hospital. There are insuperable obstacles to this practice in large hospitals.

IV.—Dr. GROBER,

Professor of Clinical Medicine in the University of Jena.

THE GERMAN HOSPITAL AND GERMAN INSURANCE LEGISLATION.

I WANT to thank the President and members of the British Medical Association, especially of the Section of Medical Sociology, for honouring me with an invitation to speak to you on the development of the German hospital in connexion with insurance legislation. The social insurance in Germany, especially the insurance for illness, has led to an exceptional and unexpected increase in the demand for treatment and nursing in hospitals. Formerly but few people who were dangerously ill could pay the fees for their stay in hospitals; but the introduction of social insurance has so increased the funds of the bodies which insure the various classes of the people that in many cases they can pay for the treatment of their members without difficulty, and prefer to send patients suffering from comparatively minor illnesses to the hospitals on account of lack of facilities for proper care at home. Since the seventies the number of hospitals in Prussia has increased from 888 to 2,314, and the number of beds from 37,039 to 160,437—increases of 300 and 400 per cent. respectively. The number of hospital patients has risen from 211,060 to 1,304,641 (700 per cent.). Hospitals to-day are made much more use of; the beds are constantly occupied, because people only slightly ill are received. About five years ago five beds were stated to be necessary for each thousand inhabitants in towns of more than 100,000 inhabitants. This number would not be sufficient to-day, especially for towns with a large industrial population. In the big towns of Germany complaints are heard every day of lack of beds; in many hospitals patients are accommodated in overcrowded wards.

The German law makes a difference between public and private hospitals. The public ones are usually kept by corporations specially acknowledged by legislation, the private ones by single private persons, private establishments, or boards. Districts or county boroughs in Prussia have erected many smaller hospitals of their own, and many towns are owners of moderate-sized and of even large

hospitals. The development of German industry and trade and the increase of wealth has enabled the towns to take up the care of the suffering in a more complete manner than ever before.

The private hospitals have a commercial interest, but this, of course, does not exclude the public one. They belong to single persons, for instance to a doctor, to joint-stock or limited companies, or to a company of several doctors or nurses. These cannot be opened without a concession by the Government, and as a preliminary the owner or manager is examined concerning his capability of managing a hospital. This concession by Government is not required by the public hospitals, but they as well as the others are subject to Government rules concerning building, equipment, and maintenance. There is great freedom to anybody wishing to erect a hospital; a monopoly does not exist, and the State reserves to itself only the right of inspection.

Owing to the growth of social insurance the duties of hospitals have largely increased. For instance, a number of persons are sent to hospitals only for the purpose of making sure whether they are really incapable of earning their living, and to what degree this incapacity is due to illness, invalidity, or accident. Sometimes as many as 50 per cent. of the patients are staying only for this purpose. The town hospitals also perform other important duties; for example, attendance upon casualties in the street, organizers of the public ambulance service and custodians of attempted suicides. The town hospital is generally regarded as at all times the best and readiest helper in every emergency of the sick or weak. There are other duties, generally not so valued, but of greater importance to the public health. The hospitals should educate the inhabitants in leading a healthy and sensible life, and instil the principles of preventive medicine. In order not to spoil the class of people for whom the hospitals are erected, undue luxury in the buildings is to be deprecated. The cost of building and equipping a hospital has risen to a great extent. This is due to increased cost of materials, wages, and the high cost of modern scientific equipment. Furthermore, the aesthetic side has considerably increased the cost. As in former times cathedrals were erected as monuments of culture and memorials to the future, to-day wealthy towns erect their beautiful and expensive hospitals which have become a characteristic sign of an increased financial, practical, and artistic power.

The financial oganization of the hospitals all over Germany has for its main principle that all the patients have to pay for their stay. If they are not able to pay personally but are insured, their board of insurance pays for them, but if they are not insured their home district has to pay for them. Every German who for two years has lived in the same place gains the right to make this place pay for him when necessary. Only very seldom can hospitals grant a charity bed. The Government, the court of justice, and the army can send patients to hospitals, but even these authorities have to pay for them during their stay. There are various classes in each hospital, and the prices vary accordingly. The daily charge in the third class varies between 2 and 4 marks; for the first and second class from 6 to 16 marks is charged. Exceptionally expensive treatment has to be paid for extra. The receipts from the patients are not sufficient to cover the expense, and extra funds are derived from the State or towns. Regular charitable gifts to hospitals do not exist in Germany except in a minor degree; there are, however, occasional bequests for special purposes. One method of reducing expense which has been tried is to send the less serious and chronic cases to simpler establishments in the country in order that their cost to the institution may be minimized.

There are complete rules enforced by the State in respect of the planning and equipment of hospitals; for instance, there must be isolation wards in which cases not recognized at first may be segregated, the size and height of the ward rooms is specified, it is provided that every ward must have a day room, and every hospital site sufficient room for a garden. There must be sufficient baths, and the administration block must be absolutely separate from the wards.

The greater number of sick beds has increased the demand for nurses, and the need has not been fully met. The emancipation of women appears to have diminished the inclination to become nurses.

In Germany to be received into a hospital is no more an act of charity, as in former days, but is a contract between the owner of the hospital and the patient. Hospitals can only wish for intelligent control by the public, and to this end they should not, as in former times, be closed to the public (departments for infectious diseases of course excepted). The interior of a hospital and the mode of living of the patients should be known to every person of fair education. I have myself proved the effect of this measure, and the more it is followed the sooner will all the ghastly stories written and told of hospitals die out for ever. The development of the German hospital has shown further that it will be useful to make the hospital the centre of all the sanitary and hygienic measures practised in the district and an important factor in the improvement of the public health. The evolution of the German hospital has not yet come to an end; it may be still too bureaucratic, but it is improving in that respect. There would be even further advances if the hospitals were placed more under the control and care of the medical staff. We find a few good examples of this in the United States and Austria, but not generally in Germany.

DISCUSSION.

Sir Henry Burdett remarked that the present condition of British hospitals called for the best brains of statesmen, the medical profession, and governing bodies. Co-operation and intercommunication between voluntary and municipal institutions for the relief of the sick were desirable. This had been emphasized by the inception of national insurance, which could not exist as a financial proposition apart from voluntary hospitals. If it were not for the services the hospitals were rendering at the present moment the Insurance Act would be a dead letter. Nevertheless the position of hospitals in regard to the Act was most unsatisfactory, although it was not impossible that the outcome might be a new departure which would place hospitals in a stronger position than ever. It was impossible to hold out to hospitals the bogey of Government control when the Government were the debtors. The inclusion of the dependants of the insured under the Act would mean an enormous pressure upon hospital funds. The only hope for hospitals was paying wards, and the objection of the medical question would be overcome if they were separate from the main hospital. The cost of building these could be raised by loan, in the way that municipalities dealt with capital expenditure, and as to maintenance, insured persons would have to be paid for *pro rata*. There were rumours of a State medical service, but he believed this would never come to pass on account of the high cost, which he estimated at between forty and fifty millions a year. Such a service would degrade medical practitioners by reducing them to the level of a salaried class with strictly limited incomes.

Professor J. A. Lindsay thought that three grades of diet and three classes in hospitals would never be regarded as satisfactory in this country. The scale of salaries in German hospitals left something to be desired. Nevertheless this country could learn from Germany the importance of organization; our own hospital system had grown up very much at haphazard. It was a great anomaly that although generous provision was made for the poor, and expensive institutions were available for the wealthy, no provision was made for the large middle class.

Dr. Charles V. Drysdale said he had visited the State hospitals and asylums of Hungary and remained sceptical as to the advantages of a highly organized system such as had been described by the readers of the papers on German hospitals. Since the establishment of these magnificent institutions the infantile mortality-rates had ceased to fall; it had fallen in the hospitals themselves, but it had gone up outside. The reason appeared to be that such elaborate care for the citizen checked the prudence of the community.

Dr. H. Gervis remarked that a great blot on the Insurance Act was that it placed no means of special diagnosis

within reach of the general practitioner; he could only get it by the good will of the consultants. Eventually every large town would have a hospital which would be the centre of the medical work of the area. He believed there would be no difficulty in obtaining money from the State, or from the State in combination with the charitably disposed. If the working classes could be made to realize the importance of this, the money would soon be found by the politicians. Unfortunately the working man's idea of the science of medicine was a bottle of physic or a pill, and a little advice which he did not follow.

The proceedings of the Section closed with a vote of thanks to the President, Dr. Ryle.

Reviews.

FOOD AND DIET.

Dr. Chalmers Watson is the author of an excellent essay on diet, which was reviewed in these pages when it was published three years ago. This book was well received by the medical profession, and his present work, *The Book of Diet*,[1] is perhaps intended to reach a wider public, and its small price should ensure it a large sale. Its scope is much the same as that of the former book, and although it is written in the simplest language and unnecessary technicalities are avoided, it conveys information which every housewife, and still more every medical practitioner, should possess, or should at least have at his elbow. Dr. Watson is not dogmatic, has no special system to advocate, but inserts details about all. In appendices are given a number of cookery recipes and the composition of some proprietary foods. Where so much has been provided at so low a price there is little ground for grumbling at omissions, yet we think all books on diet should contain tables of the composition of foods, including purins and cellulose, and their calorific value. Dr. Watson finds no valid argument against vegetarianism, except that it is "unappetizing," and he praises the menu of an "uncooked" food banquet; yet he believes that vegetarianism has often caused serious impairment of health, digestive disorder, and anaemia. He recognizes the advantages of the so-called uric-acid-free diet, but disputes the theory on which it is based. In Chapter XII he discusses the subject of the provision of nutritious meals at small cost. He speaks of ignorance of cookery, of food values, and of general dietetic economy as preventing their adoption by the poor, but forgets to mention one serious obstacle—the insuperable prejudice of this class to whatever is cheap.

We have also to acknowledge the second edition of the same author's manual of practical dietectics, which he entitles *Food and Feeding in Health and Disease*.[2] A feature of the book is that it is so arranged that special dietaries are given for special diseases, and these diets contain a large amount of information about sick-room cookery which is not to be found so well arranged in other books. In the preface to this edition Dr. Watson says that he desires to direct attention to the adulterations of food, especially to the methods of bleaching flour, which there is good reason to believe impairs its nutritive properties. His opinion seems to be that, although it cannot be shown that flour which has been chemically bleached has been deprived of any definite nutritive element, yet there is clinical evidence that flour so treated is of inferior value as a food, especially for children. We understand him to mean that it has probably undergone a deterioration analogous to that which makes machine-cleaned rice capable of inducing beri-beri in those who live upon it; this seems to be confirmed by the results of the experiments in feeding young animals recorded in our columns by Dr. Leonard Hill and his fellow workers. A report adverse to the bleaching of flour was published by Dr. J. M. Hamill, and the National Association of British and Irish Millers agreed to a resolution that wheaten flour should be the unbleached and untreated product of properly cleaned and conditioned wheat only, while at a later date a committee appointed by the Council of the National Association of Master Bakers arrived at the conclusion that the bleaching of flour was objectionable, and that no bleached flour should be sold to bakers without the fact being disclosed. In spite of these decisions, a prosecution at the instance of the County Council of Lanarkshire failed on the ground that no proof had been tendered of deleterious results, so that until the clinical evidence is strengthened we must look to the influence of medical opinion upon the trades concerned and upon the consumers to check a practice which is probably harmful and certainly unnecessary.

Mr. Kenneth Haig's book, *Health through Diet*,[3] is written to explain and advocate the uric-acid-free diet. The author is the son whose case was related by Dr. A. Haig in *Uric Acid in the Clinic*, reviewed on October 1st, 1910, p. 975. Mr. Haig was in that book described as an artillery officer, but has since entered the medical profession, and the reference to "eighteen years' personal experience" of the system apparently refers to the knowledge he has acquired of it in his own case. What he has found to benefit him he contends will benefit everybody, although he admits that he was not an "average healthy child" (p. 77). He attributes the prevalence of "bronchopneumonia, cancer, anaemia, diabetes, heart disease and rheumatism, apoplexy, Bright's disease, and suicide" to the use of articles of food which introduce uric acid into the body. According to his way of writing, food is only "nourishing" in proportion as it contains nitrogen. He condemns fruit, objects to drinking water, would limit all fluids to one pint and a half daily, forbids children to drink any but distilled water, deprecates the use of the cold bath as "bracing," condemns smoking as "stimulating," and thinks tea-drinking as objectionable as the use of opium. We have no doubt of the value of "uric-acid-free"—or, as we prefer to call it, "purin-free"—diet for certain cases, but we are unable to follow Mr. Haig in thinking that it is either desirable or suitable for general adoption, or that its neglect is accountable for all the diseases he enumerates.

The little handbook by Dr. William Tibbles, called by its short title, *Diet in Dyspepsia*,[4] really embraces a good deal more, and includes "other diseases of the stomach and bowels," as stated on the title page. It was originally written as lectures for the *Nursing Mirror*, and is now printed in the hope that the lectures "will be of general utility," but information that may be quite fittingly offered to nurses may not be so appropriate for popular reading. There is a good deal of physiology, pathology, and symptomatology, but a writer of a book of this kind is in a dilemma; he must either assume that his readers are in a position to diagnose the various conditions for which he recommends appropriate dietetic treatment, or they are not; in the former case they must either possess, or he must endeavour to supply them, with a certain amount of medical information; in the latter the book must be useless to them. It may be that such information is capable of being utilized by nurses, but not by the public, and the work is more suitable for the instruction of medical students and young practitioners, who will find it to contain a well-written and on the whole trustworthy account of modern dietetics as applied to the treatment of the diseases under consideration.

TEXTBOOKS OF NEUROLOGY.

Professor Oppenheim's textbook of nervous diseases has long been recognized as a standard authority in neurology. Its first edition came out in 1894, and the sixth,[5] enlarged and improved, lies before us in two massive tomes that

[1] *The Book of Diet*. By Chalmers Watson, M.D., F.R.C.P.E. London, Edinburgh, etc.: Thomas Nelson and Sons. 1913. (Cr. 8vo, pp. 447. 2s. net.)

[2] *Food and Feeding in Health and Disease*. A Manual of Practical Dietetics. By Chalmers Watson, M.D., F.R.C.P.E. Second edition, revised. Edinburgh and London: Oliver and Boyd. 1913. (Med. 8vo, pp. 654. 10s. 6d. net.)

[3] *Health through Diet*. By Kenneth G. Haig, L.R.C.P.Lond., M.R.C.S.Eng. London: Methuen and Co., Ltd. 1913. (Cr. 8vo, pp. 237. 3s. 6d. net.)

[4] *Diet in Dyspepsia and other Diseases of the Stomach and Bowels*. An Elementary Treatise on their Dietetic and Hygienic Management. By William Tibbles, M.D. London: The Scientific Press, Ltd. 1913. (Fcap. 8vo, pp. 158. 2s. 6d. net.)

[5] *Lehrbuch der Nervenkrankheiten für Aerzte und Studierende*. By Professor Dr. H. Oppenheim. Sixth edition, in two volumes. Berlin: S. Karger. 1913. (Sup. roy. 8vo, pp. xvi, 1–789, 790–1926; plates 14, figs. 523. Paper covers, Mk. 52: bound, Mk. 56.)

weigh 10 lb. unbound. The fifth German edition, from which the late Dr. Alexander Bruce's English translation[6] was made, was published in 1908. Since that time increasing progress has been made in neurology, as Professor Oppenheim points out, particularly in our knowledge of the etiology of infantile paralysis, the reactions indicative of syphilitic infection, the discovery of salvarsan, the connexions between the various ductless glands and the diseases associated with their disorders, and in many other directions that cannot now be detailed. So much is this the case that he doubts whether any single man can hope to cover the whole field of modern neurology any longer. The first volume begins with 112 pages on the methods of examining the general symptomatology of patients with nervous disorders. Then follow 400 pages on diseases of the spinal cord, and 250 on those of the peripheral nerves. The second volume is given up to the diseases of the brain (600 pages), the neuroses including hysteria and neurasthenia, and a number of rarer nervous disorders that find no place elsewhere. The book ends with an excellent index. Professor Oppenheim writes with the double authority of a very extensive personal observation of nervous diseases on the one hand, and on the other with a considerable acquaintance with the literature of neurology; it is, perhaps, natural that the German writers on the subject should be by far the most freely quoted in a German textbook. His style is clear, his sentences not over-long—he does not indulge, as many of his countrymen do, in "Long constructions, strange, and plusquam-Thucydidean," like those of the joyous Sir Hector in Clough's poem. The book is thoroughly up to date, and the illustrations, nearly a hundred of them new, form a most valuable series. Professor Oppenheim's work is already familiar to all neurologists, and stands in no need of further eulogiums at our hands; its sixth edition fully maintains the high standard set by its former issues, and is indispensable as a monumental and trustworthy book of reference for all who want to know all about nervous diseases.

Dr. ROBERT BING'S textbook of nervous diseases,[7] designed for the use of medical students and practitioners, takes the form of thirty lectures, in which these diseases are considered seriatim. Lectures, he believed in his student days, were the least tedious form in which the knowledge demanded by examiners could be acquired. He has adopted an eclectic attitude in writing his textbook, and devotes a good deal of space to the treatment of the nervous disorders he describes. The first five lectures are given to diseases of the peripheral nerves and the dyskinesias; then follow chapters on the progressive muscular atrophies, spastic paralyses, ataxias, and other spinal disorders. Four chapters are allowed to syphilis of the central nervous system; tabes is considered at length, but—perhaps by an oversight—without any mention of the name of Grasset of Montpellier when the deep anaesthesia of tabetics is under discussion. The remaining sixteen chapters deal with such subjects as arterio-sclerosis of the central nervous system, its acute infections, cerebral haemorrhage and softening, cerebral tumours, congenital cerebral defects, diseases of the cerebellum, epilepsy, neurasthenia, and other subjects. Dr. Bing includes two lectures on exophthalmic goître, myxoedema, Addison's disease, acromegaly, and other "dysglandular syndromes," as he calls them, that one would not expect to find in a textbook of nervous diseases written in this country. It may be noted that Graves described the disease—now known as exophthalmic goitre, its French name translated into English—in 1835, Basedow in 1843, so that Dr. Bing is hardly correct in stating that these two physicians described it simultaneously about the year 1840. Dr. Bing writes clearly, and his book is readable and not overloaded with detail. It may be recommended to advanced students of medicine and to practitioners who are in want of a sound and simple German textbook of nervous diseases.

[6] Reviewed in BRITISH MEDICAL JOURNAL, February 24th, 1912, p. 434.

[7] *Lehrbuch der Nervenkrankheiten für Studierende und praktische Aerzte.* In 30 Vorlesungen. By Dr. R. Bing. Berlin and Vienna: Urban and Schwarzenberg. 1913. (Sup. roy. 8vo, pp. 614; figs. 111. Paper covers, Mk. 18; bound, Mk. 20.)

OBSTETRICS.

THE latest addition to the literature from the Edinburgh School of Obstetrics has appeared in the form of a *Guide to Midwifery*,[8] by Dr. D. BERRY HART. A knowledge of obstetrics to be of any value must be essentially practical, and in his book the author has made an attempt to urge the importance of this on the receptive mind of the student by suggesting such practical work as it is possible for him to carry out in the circumstances. The book has been written in two parts, the former of which contains the necessary facts of obstetrics, and from it all cumbersome theories have been omitted. In the second part notes have been added to be as it were appendages to the chapters of the first part. This portion also includes a summary of the more recent theories advanced, with an account of the literature, and is intended to be studied only on the second reading of the book and by those who seek a more intimate knowledge of their subject. This arrangement has much to recommend it. The book is obviously intended for those who are commencing their studies in this subject, and Dr. Hart is one of the few authors who apparently appreciate that the average mind, when entering for the first time into the unknown realm of a new subject, is best directed along the main road and is merely confused by being continually diverted along doubtful by-paths. In a textbook presenting many excellent points we must confess to a little disappointment at the rather meagre account given at times under the heading of treatment, and we are sure that this feeling will be shared by the practitioner, who will expect more helpful advice in the handling of, for example, a case of occipito-posterior presentation from a man of the experience of Dr. Hart than is at present to be found in the dozen lines that deal with this subject. The author has wisely not hesitated to make use of a number of the excellent illustrations that are to be found in some of the Continental works, with the result that a volume has been produced that is to be regarded as a clear and useful exposition and one that is destined to take a high place among the present-day textbooks on midwifery.

In his *Manual of Midwifery*[9] Dr. G. BALFOUR MARSHALL, of Glasgow, produces in book form the notes and diagrams he has been in the habit of issuing to the students who attend his classes. To those who have been so fortunately placed the book will no doubt be welcome. The title can hardly be considered to be in keeping with the general style of the book, and does not appear to have been very happily chosen. Causes, symptoms, etc., are arranged in series. It is claimed that the more common everyday subjects are dealt with at some length, and receive fuller recognition than those less commonly met with in general practice. We cannot, however, help feeling that the selection has not always been wise. For example, it is difficult to agree that a subject of the importance of the pyelitis of pregnancy should be dismissed in a brief dozen lines. Under the heading of treatment the reader is so frequently confronted with a list of the various suggestions made by different authorities, that it is refreshing to come across a clear and concise account of the particular views held by such a competent authority as the author. This tendency towards the dogmatic might well be more closely imitated by those authors who are in a position to give an opinion based upon personal experience. The illustrations have been produced from blocks prepared from the author's diagrams. In a number of instances they seem to need more explanation. The volume is not intended to rank amongst the textbooks on the subject, but many of the author's old pupils will doubtless be glad to have in compact book form those notes and diagrams which they possessed in their student days.

CORRECTION.

IN the review of the English edition of Dr. Charles Richet's book on *Anaphylaxis*, published in the JOURNAL of July 12th, page 76, the number of pages should have been given as 266 and not 78 as stated.

[8] *Guide to Midwifery.* By D. B. Hart, M.D., F.R.C.P.E. London: Rebman, Limited. 1912. (Med. 8vo, pp. 789; plates 4, figs. 255. 25s. net.)

[9] *A Manual of Midwifery for Students and Practitioners.* By G. Balfour Marshall, M.D., C.M., F.R.F.P.S.G. Glasgow: J. Maclehose and Sons. 1912. (Med. 8vo, pp. 419; plates 9, figs. 125. 14s. net.)

EIGHTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.

Held at Brighton, July 22nd to 25th, 1913.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

SECTION OF BACTERIOLOGY AND PATHOLOGY.

Thursday, July 24th.

UNDER the presidency of Dr. Eyre a joint discussion was held with the Section of Pharmacology and Therapeutics on anaphylaxis. This was opened by Professor W. E. Dixon, who gave a careful summary of Bichat's early work and the subsequent experimental observations on which the different hypotheses have been based. He then detailed the symptoms of the condition under the headings of circulatory system, muscular system, and local symptoms. He summarized the three main theories as to the causation of anaphylactic shock, referring to (1) the side-chain view as a speculative hypothesis, (2) the ferment theory as one based on observed facts, but not perhaps explaining all the phenomena, and (3) the idea of its being due to a physical change in colloid material due to the interaction of antigen and antibody. Professor Sims Woodhead, who followed, instanced a number of clinical phenomena which undoubtedly depended for their production on anaphylactic shock—as, for example, puerperal eclampsia, possibly due to uterine contractions, the result of absorption of a reaction dose upon the previously sensitized uterine muscle; and hydatid infections, and the sometimes startling and fatal results which follow operative procedure; and to tuberculin treatment, where the sensitizing dose was derived from the actively infected process, whilst the exciting dose was obtained by the injection of tuberculin during the course of treatment; and to the possibility of some of the phases of the pneumonia syndrome being due to sensitization by the bacterial protein of the pneumococcus. Dr. Embleton (London) then detailed observations on the production of anaphylaxis in animals sensitized by means of amboceptors, and Dr. Thiele (London) described the production of acute septicaemia in experimental animals inoculated with saprophytic bacteria after previous sensitization by injection of bacterial protoplasm of the same species. Dr. Goodall (London) opened his contribution with a description of two closely similar cases, one of anaphylaxis in connexion with antidiphtheritic serum, the other anaphylaxis following repeated wasp stings. Dr. Myer Coplans related a case of a cancer patient repeatedly inoculated with antivenom serum, and who, as a result of an inoculation during the allergic state of an exciting dose, showed remarkable skin lesions during the few moments that elapsed between the inoculation and death. After further discussion by Dr. Braxton Hicks and Dr. Embleton, Professor Dixon briefly replied, affirming his adherence to the ferment theory, and Professor Woodhead suggested the use of bovine or coprine serums as means of prophylaxis. Dr. Myer Coplans next detailed his experiments relating to the action of asbestos and allied minerals upon bacterial and other toxins, from which it appears that contact between toxin and asbestos leads to a marked and rapid loss of toxicity, associated with the removal of proteose from the fluids. Further, the growth of organisms in culture media containing asbestos results in an alteration in morphological and cultural reactions associated with a very marked diminution in virulence, with particular reference to anthrax and plague. His colleague, Dr. Lloyd, communicated the result of work on the same lines when certain physiological substances were substituted for bacterial products. There could be no doubt that this paper formed a most valuable contribution to the proceedings, and the subsequent demonstration by Dr. Coplans on his ingenious apparatus and his collection of asbestos and allied minerals was most noteworthy, and more especially so when it was appreciated that this work of wide-reaching import had been carried out in the rare intervals that fall to the lot of an overworked scientist struggling with the routine work of a large centre and a teaching school.

Friday, July 25th.

The session opened with a paper by Dr. W. C. Lyons on the specific diagnostic and therapeutic value of proteose-free tuberculin. This forms the first practical application of Myer Coplans's work on the removal of proteoses from bacterial toxins by means of finely divided asbestos. Proteose-free tuberculin was found to give more reliable indications as to present and active tuberculosis than the old tuberculin as used by von Pirquet. The speaker had employed it for all the various cutaneous reactions, but recommended its use by the *intradermal method*. He had also used it in 100 cases of phthisis in a sanatorium under his charge with most promising results, in doses of 0.001 c.cm. for ordinary cases, and 0.0001 c.cm. for acute cases. Dr. A. M. Buchanan (Glasgow) followed with a paper on *Empusa muscae* as a trajector of bacterial infection. This was illustrated by a collection of photomicrographs and lantern slides, which aroused general admiration, inasmuch as they not only showed the painstaking and detailed labour involved in the inquiry into the life-history of this fungus, but formed for the first time a series of illustrations of the fungus itself. He summarized the work already done in connexion with flies as carriers of disease, and then detailed his own observations on the relation of the fungus to the fly. He had not obtained any confirmation of the view that infection occurred from within, and he had found practically always that the alimentary tract was free from the fungus. He demonstrated that the entire fly was infected from the proboscis to the last segment of the abdomen, and in some cases the fungus could be seen surrounding the eggs but never penetrating the shell. From this he suggested that probably infection occurred in the larval stage, and adduced in support the universal invasion of the entire fly. This, however, was merely a hypothesis to explain the persistence of the fungus from season to season. His attempts to cultivate the fungus had all failed, though on glucose agar he had obtained a little mycelial growth from the spores; this, however, could not be further cultivated. Dr. Monckton Copeman (London), speaking on the paper, touched on the work carried out under his supervision for the Local Government Board, and mentioned that in the forthcoming publication of that body corroboration of Dr. Buchanan's work would be found. He did not agree that infection took place in the larval stage. He mentioned an interesting fact concerning a simple method of rapidly slaying all the flies in a room by burning a little pyrethrum powder. Dr. Bernstein (London) mentioned the work that was being done by Mr. Hesse under his supervision on the cultivation of the *Empusa* and the artificial infection of flies, which as yet was wanting in corroboration; and discussed the larger question of analogous fungi which attacked locusts and the cinch bug, and which were, perhaps, even of greater moment. Dr. Eyre expressed his pleasure at hearing so original a contribution and hoped that the communication would be published in full. Dr. Ross, on behalf of the staff of the John Howard McFadden Research Fund, then read a brief account of the jelly method of staining cells alive, which formed an introduction to a demonstration in the microscope room. Here also was revealed, to the interest of everybody, a rabbit with a chancre of the penis as a type of a naturally occurring disease which is analogous to syphilis. It occurs, according to Dr. Ross, in 1 per cent. of all rabbits, and presents, after an incubation period, secondary manifestations. It was quite unknown to many bacteriologists present. Dr. Galt amplified a paper, which he had previously read, by a microscopic demonstration of blood films from various observed states. This brought the session to a close.

SECTION OF CLIMATOLOGY AND BALNEOLOGY.

Thursday, July 24th.

THE President, Dr. F. J. Paley, called on Dr. Neville Wood (London) to open the discussion on international aspects of British health resorts. Dr. Neville Wood prefaced his remarks by a definition of the term "health resort." It, he said, should be applied to a place to which,

usually, patients are sent for a comparatively short time, and for a definite course of treatment. It was, in fact, equivalent to the German word *Kurort*. He also pointed out that although in England the chief facts about the leading Continental health resorts were well known both to the profession and the public, the specific merits of British natural therapeutic resources were scarcely suspected on the Continent, and imperfectly appreciated even in America. He assigned as a reason for this state of things the fact that hitherto British municipalities had confined their efforts to begging the leaders of medical opinion to set their faces against the exodus of British invalids, while making no sufficient attempt to redress the existing adverse balance by attracting patients from foreign lands. Since England alone pursued this narrow policy of isolation, they must look abroad to find what might be gained by the substitution of one that was more progressive. By far the largest profits from the health resort industry were reaped by the country which made the smallest effort to keep its nationals at home, yet numerous as were the foreigners attracted, they were always outnumbered by the native-born. Unfortunately not a few Englishmen, especially among the leisured class, took it for granted that Continental spas occupied a higher plane than those of their own country. With such persons argument was vain. If it were possible to state that foreign experts preferred British spas for some groups of their patients, the prestige of British resorts would at once be established and a larger proportion of British invalids would be content to remain at home. Prestige was the very breath of life in health resort practice, bringing in its train confidence in ultimate recovery and willingness to submit to necessary discipline. Dr. W. Gordon (Exeter) laid stress on the special suitability of the south-western division of Devon for cases of heart disease associated with bronchitis, and for sufferers from chronic dry respiratory catarrh, a malady common in Central Europe. Drs. Tyson (Folkestone), Whittington (Brighton), Copeman (Brighton), Durward Brown (Harrogate), and the President concurred in the remarks made by the opener of the discussion. Lieutenant-Colonel W. Burke was not fully satisfied with the accommodation provided by British hotels, especially in relation to the prices demanded.

Friday, July 25th.

The last day's work, over which Dr. Whittington, as Vice-President of the Section, presided, was devoted to the reading of papers. Dr. H. de Carle Woodcock (Leeds), in the first of these, cast doubt on the value to the practical physician of the elaborate statistics of phthisis morbidity and mortality drawn up in various localities, and pointed out the fallacy of attributing specific value to any single place. The paper was discussed by Dr. W. Gordon (Exeter), who emphasized the need for further work on the climatology of phthisis, and by Dr. Evans (Davos). Dr. Durward Brown (Harrogate) then gave an account of panniculitis, a disease which had been described by a French physician as compatible with life but not with comfort. It disappeared, leaving no traces (in the majority of cases) if properly treated. It was characterized by the greatest of all subjective symptoms—pain—and though it had an organic basis, it made one think of neurasthenia. Dr. Blackburn (West Hartlepool) doubted whether the disease was a separate morbid entity. Dr. W. Gordon (Exeter), in a paper on the distribution of cancer cases in two registration districts of North-East Cornwall, drew the conclusions (1) that the disease is relatively common on low clayey levels along rivers which habitually flood their banks; (2) that it is relatively rare on higher and drier ground; (3) that it is said to be relatively rare on limestone; (4) that it is relatively common among trees; (5) that it is prone to recur in the same house. Dr. Odell (Torquay) also quoted cases of house infection, a condition which Dr. Ackerley (Llandrindod) thought might be due to bad sanitation or perhaps to the infection of rodents. A very suggestive paper was then read by Dr. Ackerley (Llandrindod Wells) on massage in fibrositis and other painful affections, in which he laid great stress on the curative influence of properly conducted massage, and conversely on the damage frequently following ill-applied manipulations. The climate of Brighton in relation to disease was the subject chosen by Dr. Hobhouse (Hove), who claimed that sensibility to climate was largely a matter of temperament; the more stable the mental equilibrium, the less the susceptibility to changes of weather or climate, so that no scientific reasons could be given for saying that Brighton was good for this or that disease. It was a curious fact that although Brighton would appear from meteorological data to be rather warmer than Worthing during the greater part of the year, the air of the first-named town was decidedly the more bracing. Early or arrested phthisis, provided there was little tendency to bronchial involvement, did very well at Brighton, and children with enlarged glands soon derived benefit from the climate. Haemoptysis was rarely met with at Brighton. Dr. Griffiths (Hove) and Dr. Whittington (Brighton) remarked on the considerable climatic differences between different parts of the areas commonly included under the name of Brighton, and Dr. Copeman (Brighton) described the singular phenomenon of cold sea fogs or mists rapidly arising and as speedily disappearing on very hot days. The session ended with a paper by Dr. Buckley (Buxton) giving an account of the rationale of the Plombières douche, which was discussed briefly by Drs. Durward Brown, Neville Wood, and Ackerley.

Section of Dermatology.

Thursday, July 24th.

Dr. Sequeira having opened the second day's proceedings by offering a welcome in the name of the Section to Dr. Abbe, and Dr. Truman Abbe of New York, Dr. J. Macleod (London) read a paper on the nature, varieties, causes, and treatment of lupus erythematosus. He touched shortly on its clinical varieties, and illustrated his remarks with lantern illustrations of the disease in its most typical appearances. After spending a few moments on a valuable demonstration of its histological anatomy, he passed on to a consideration of its etiology, regarding which he confessed himself in agreement with those who do not believe in a tuberculous causation. After giving his reasons for this opinion he reviewed the treatment, urging the necessity of using the utmost caution in the application of CO_2 snow even in chronic cases. He had not found x rays of much use. In acute cases quinine and salicin internally had always given good results in his hands. Sir Malcolm Morris complimented the opener on the mature and reasoned excellence of his paper and agreed with him on the question of the etiology. He thought most cases might be classified under one of two heads: (1) Those resembling the generalized toxaemias of an erythema multiforme; and (2) the localized varieties brought out by exposure in faulty circulations. He had found that iodine tincture locally applied (the colourless variety was almost as good) was very effectual in many cases. Professor Wild followed with an analysis of 142 cases of the condition from his wards at the Royal Infirmary, Manchester. He was in favour of a tuberculous etiology for some of his younger cases. Dr. Bolam also laid stress on the interest pertaining to the etiology of the condition, and stated that he had found a tuberculous stigma or history in 30 per cent. of his cases. Dr. Eddowes confined himself to remarks on treatment, and mentioned some successes he had had with the puncture of painful nodules. Dr. Haldin Davis agreed in the main with Dr. Macleod's summary of its etiological factors, and related some results recently obtained at St. Bartholomew's Hospital with electric galvano-puncture. Dr. Pernet (West London Hospital) remarked on the importance of correcting pyorrhoea and chronic constipation where they existed. Dr. W. Williams, to whom the Section owed a debt of gratitude for the excellent cases of lupus erythematosus shown by him before the opening paper was read, explained some points in connexion with several of them. Dr. Abbe (New York) discussed the treatment of lupus erythematosus with radium, and declared it as his opinion that there was a great future for this therapeutic aid when filtration methods had become more perfect. Dr. Semon drew the Section's attention to a most important paper in the current issue of the *Archiv für Dermatologie und Syphilis*, in which Professor Bloch and Dr. Fuchs of Basel had proved experimentally the tuberculous origin of some cases at least of the condition under discussion. Dr. Dore also touched on the etiological side, and found

himself in agreement with Dr. Macleod and the majority of the speakers regarding its non-tuberculous causation. Dr. Barendt believed in the plurality of etiological factors concerned, and gave some useful hints on treatment. The President concluded the discussion. He thought there must be an underlying etiological factor common to all types of the disease, and he mentioned a case in which an obscure form of intestinal toxaemia had produced the condition. The morning's work concluded with a paper by Dr. Meachen entitled, A Preliminary Note upon the Treatment of Cutaneous Tuberculosis by means of Copper.

Friday, July 25th.

At the final session (1) Dr. Bunch read a brief but comprehensive paper on the uses of solid CO_2 snow in dermatological diseases. In his experience the following conditions were most amenable to the treatment: Angiomata and naevi, hairy naevi, in which the hairs should be just destroyed by electrolysis, and port-wine naevi; rodent ulcer gave excellent results after two or three applications in early cases. Other lesions treated by him were lupus erythematosus, lupus vulgaris, lichen planus, chronic eczema, corns and warts, all with success. Dr. Gardiner (Edinburgh Royal Infirmary) thought the treatment had its limitations, and gave instances of these. Professor Wild agreed with the last speaker, but was happy to confirm Dr. Bunch with regard to early cases of rodent ulcer and seborrhoeic warts. Dr. Bunch replied. (2) Dr. David Walsh, in a paper on circulatory disorders in relation to alopecia areata and other forms of baldness, came to the conclusion that cardiac and vascular disease played a vital and hitherto unsuspected part in the production of alopecia and alopecia areata. His opinions were not shared by Drs. Eddowes, Barendt, and Griffith, who spoke subsequently. The President (Dr. Sequeira) wished to know how many of the cases reported on had come from heart hospitals, or had been previously treated for cardiac disorders. Dr. Walsh replied. (3) Dr. Gardiner, Lecturer on Skin Diseases at the University of Edinburgh, read a paper on a most extensive case of acne necrotica, which he illustrated by admirable photographs. An animated discussion followed, in which the President, Dr. Bolam (Newcastle), Dr. Barendt, and Dr. Griffith took part. Dr. Haldin Davis read a carefully prepared summary on the preparation and composition of modern ointments. The paper was very well received, and the President complimented the author on his treatment of a difficult subject. Dr. Barendt, Dr. Semon, Dr. Eddowes, Dr. Bolam, Dr. Hobson, and Professor Wild took part in the discussion which followed. Dr. A. Winkelried Williams then read a very complete summary, which he curtailed owing to lack of time, of the treatment of chronic leg ulcers, laying particular stress on the usefulness of anaesthesin in painful cases. Dr. Mowbray (Castledare), Dr. Dore, Dr. Davis, Dr. Barendt, Dr. Semon, and Professor Wild also spoke. Dr. Dore read a valuable paper on the modern use of x rays in psoriasis and other skin diseases, such as acne, hyperhydrosis, mycosis fungoides, pruritus, and warts. The President, Dr. Griffith, Dr. Gardiner, and Dr. Semon also spoke. Dr. L. J. Hobson (Harrogate) earned the thanks of the Section for his admirable survey of the types of cases most suitable for treatment at the Harrogate Spa. His remarks were supported by Drs. Gibson (Harrogate), Gardiner, and Griffith. A very cordial vote of thanks, proposed by Professor Wild, for the splendid services of the President and his two secretaries throughout the three days of the meeting of the Dermatological Section was seconded by Dr. W. Williams and passed with acclamation.

Section of Diseases of Children.

Thursday, July 24th.

Mr. T. Openshaw, C.M.G. (London), opened the discussion of the day, the choice of methods of dealing with paralytic deformities in children, by giving a brief summary of the various methods—rest, tenotomy, nerve section, or grafting—at present employed, illustrating his remarks by recording cases that had come under his own observation. Oblique division of the tendons was advisable in many instances; the speaker supplied many details of the different operations performed by the orthopaedic surgeon in various cases of deformity, and sounded a note of warning as to the extravagant claims sometimes made for neuroplasty. Transplantation of the peronei into the tibiales was among the most successful of all transplantation operations. Walking instruments might have to be worn for several years before it became possible to say whether any return of power to a paralytic leg could be looked for or no. Thus, one patient wore an instrument for twelve years before any sign of return of power to the quadriceps extensor femoris appeared. The case was quoted of a girl with the power of voluntarily dislocating one hip-joint and then reducing the dislocation. The treatment of the pronated arm of the hemiplegic demanded open division of the pronator radii teres muscle; many other muscles, particularly the subscapularis, might require division in hemiplegic patients. Replacement of a paralysed deltoid was not easy or successful; a portion of the median, musculo-spiral, or other nerve, might be grafted into the circumflex in such cases as these. Next followed Professor Foerster (Breslau), who dealt with the relief of spastic paralyses by posterior root section. Athetosis gave disappointing results—in 15 cases—when treated by this method. Resection of a large number of roots was in general advisable; if a small number of roots were divided there was fear that the spastic paralysis would return after the operation. Electric stimulation of the motor nerve roots (lumbar and sacral) should be performed during the operation, as a matter of precaution before the division of the nerve roots. The after-treatment of these cases was most important, to overcome the flexor spasticity that tended to follow, and extension of the legs was here most important. Apparatus must be worn, excepting when muscular exercises were being taken. Standing and walking exercises followed; the cases in which this treatment was most applicable, having often never walked. Later on crutches were used, then two sticks, then one stick, and finally the patient stood alone. Full details of the training and exercises required by these patients were given, and were made very clear by a long series of admirable lantern slides and photographs. Mr. R. Jones (Liverpool) complimented Professor Foerster on the great skill and care with which he treated and followed up his cases, and outlined the treatment he employed himself with results so much less satisfactory because so much less complete. Professor Foerster's method was perhaps most applicable to the cases of extreme deformity and long standing that were often the despair of hospital orthopaedic departments. As regards Mr. Openshaw's advocacy of arthrodesis, he himself found he employed it less now than he did years ago; and arthrodesis of the knee-joint he had almost entirely given up. Tendon transplantation was admirable when well designed, and when too much was not asked of the transplanted tendon. Mr. Laming Evans (London) contributed four cases of the treatment of spastic paralysis (Little's disease) by section of the posterior nerve roots, with details of the operations and the treatment that followed. He emphasized the importance of careful and prolonged after-treatment, like that given by Professor Foerster, in this treatment. He doubted whether the peronei could ever take the place of a paralysed tendo Achillis, as Mr. Openshaw had stated. Mr. W. J. Midelton (Bournemouth) emphasized the slowly progressive character of infantile paralysis, an infective disease of slow progress, and spoke briefly of his method of treatment. Miss Hultman (Hove) described her methods of massage and movement in cases of infantile paralysis, with slow increase in the range of movements made with contracted muscles. Hyperextended muscles were to be attacked in a somewhat similar manner. Mr. R. C. Elmslie (London) gave an account of the uses of splinting, movement, tendon transplantation, arthrodesis, neuroplasty, and other methods of treatment in the paralyses of children. Professor Foerster, in reply, answered a number of questions put to him. Root resection was advisable mainly in the cases in which all other treatments had failed. Athetosis might disappear for a few months (by the diaschisis of von Monakow) after the operation, but would always return. He gave reasons for choosing the operation by the method he described rather than any other, preferably in two stages to avoid shock. Neuroplasty gave him no good results in poliomyelitis. Mr. Openshaw, in reply, commended the moderate exercises advocated by Miss Hultman, and thought that the

electrical stimulation of these paralysed muscles was often overdone. About forty members attended the session of this Section.

Friday, July 25th.

The day's discussion on the diagnosis and treatment of acute inflammatory affections of the abdomen in children was opened by Mr. C. B. Lockwood (London), who illustrated his various points by the quotation of cases bringing out special features, such as obstruction of the intestine, peritoneal inflammation, fever, and rigors. Rigors he held to point to acute and dangerous infection, generally streptococcal in nature. Periods of repose after the sudden onset of some acute abdominal condition were often most misleading; and absence of premonitory symptoms was often no less misleading, quite apart from the fact that children not rarely concealed their pains and ailments. The diagnoses of "ptomaine poisoning" and "bilious attacks" had often been found by Mr. Lockwood to conceal an acute inflammatory affection of the abdomen. Irregularity of the pulse was a sign to which he attached great importance when it was present in these cases. The fetal type of appendix he believed to be one of the chief predisposing causes of appendicitis in children. Pain during micturition and pus in the urine were both highly suggestive of acute pelvic inflammation in children with acute abdominal inflammation. Turning to some of the constitutional symptoms observable in these cases, Mr. Lockwood remarked on the value and importance of observations on the pulse-rate, which tended to accelerate with the progress of an infection. Intermittent pulse in a resting child was often seen in children with acute abdominal conditions, and was always serious. He attributed the same importance to an increasing leucocytosis as to an increasing pulse-rate. The diagnosis between pneumonia and appendicitis was difficult in but few cases if the respiration-rate were watched. Acute tuberculous abdominal conditions were not rarely encountered, often in the form of intestinal obstruction. In general continuous and careful observation of these patients would avert the occurrence of catastrophes in these cases. Mr. R. H. A. Whitelocke (Oxford) emphasized the tendency of acute abdominal inflammations in children to spread rapidly after an insidious onset, to lack the feature of tympanites, to be associated with diarrhoea, to suggest an acute cerebral condition—all of them circumstances that made the diagnosis difficult. A rectal examination was very important. In male children the right leg was often drawn up early; in female children the initial pain was often on the left side rather than the right in acute appendicitis. Dr. W. J. Tyson (Folkestone) said the great increase in the incidence of appendicitis seemed to him to demand a Royal Commission to determine the origin of the complaint. Mr. C. F. Cuthbert (Gloucester) also emphasized the importance of the rectal examination; children were remarkably tolerant thereof. Mr. George Morgan (Brighton) described the case of a patient in whom a pin perforating the ileum produced a train of symptoms simulating acute appendicitis. The importance of early operation in these instances was once more emphasized by Dr. L. A. Parry (Brighton), who also spoke of the fever sometimes seen in cases of acute intussusception, cases thus imitating ileo-colitis. Dr. G. L. Crimp (Walton-on-Thames) detailed an interesting and complex case of appendicitis, followed by empyema, in which he operated. Dr. H. Bramwell (Nunney) recounted cases illustrating the tendency of children to conceal their symptoms. Dr. Hutt (Brighton) quoted obscure cases for Mr. Lockwood's analysis and explanation. Dr. Chaffey (Hove) asked about the importance of meteorism in children with acute abdominal inflammations. Dr. A. E. Naish (Sheffield) dwelt on the importance of the intelligence of a mother who had a child with an acute abdominal inflammation. The President referred to the very difficult cases of appendicitis in infancy, so rapid in their course, so urgently calling for immediate operation. Acute pancreatitis after mumps might be very difficult to diagnose, and did not call for operation; the gonococcal peritonitis of children similarly tended to recover without operation. Rapidity of respiration in children would rarely serve to diagnose pneumonia from appendicitis. He also spoke of an epidemic of appendicitis occurring in an industrial school: the association of tonsillitis with appendicitis was worthy of further investigation. A paper on the necessity for selection and for skilled supervision in the treatment of spinal deformities by exercise having been read by Mr. Kellett Smith (Eastbourne), the proceedings of the Section closed with a eulogy of the secretaries from the President. About fifty members attended the day's proceedings.

Section of Electro-Therapeutics.

Thursday, July 24th.

The proceedings of the Section were reopened with three papers on the subject of electrical diagnosis and treatment. The author of the first, Dr. C. F. Bailey (Brighton), in dealing with electro-therapeutics in neurone lesions, confessed that he was becoming more and more of opinion that as a method of treatment, omitting cases where ionic medication was required, the constant current might be given up. For testing purposes it would probably still be of use, although even here the condenser methods seemed likely to supersede it. Dr. Lewis Jones (London), in the next paper, advocated the use of condensers for treatment as a substitute for induction coil currents, and demonstrated an instrument in the form of the pantostat, possessing a motor fitted with a condenser commutator and a rhythmic interrupter. Dr. E. P. Cumberbatch (London) also read a paper on condenser discharges for muscle testing. The method, he said, produced little or no pain as compared with the sting of the battery current. The author said that he had tested muscles which beyond all doubt gave a partial reaction of degeneration, and yet responded to very small condensers. He suggested that there was another type of reaction between the weak normal and the partial R.D. Dr. Lewis Jones also expressed the view that partial R.D. would presently be analysed into several components. Dr. Hernaman-Johnson and others discussed the apparatus and the three papers. Dr. Lewis Jones read a second communication on the treatment of corns and warts by ionization. His procedure was simply to use first a zinc positive needle for the centres or foci of the corn, and to follow this up with the ionization of the whole of the affected area with a zinc plate and a pad moistened in the usual way with a zinc salt. As to warts, when these were small and close together, ionization with a pad and zinc solution was quicker than the needling of individuals. For some warts magnesium answered very well. Dr. J. D. Harris (Exeter) recorded in a paper his experiences of secondary x rays employed in association with ionization in various ulcers and lupus. There appeared to be, he said, an occasional inhibitive action in the x-ray patient which restrained the benefit at another time exercised freely by the rays. The uncertain and fugitive benefit was capable of being restored and maintained in some instances by ionization. Other speakers bore witness to the value of the combined method, Dr. Bowker (Bath) describing a case of rodent ulcer in which the zinc ions were used twenty-four hours before irradiation, and led to a complete recovery. Mr. Hall-Edwards (Birmingham) preferred secondary radiations from silver, the wound being covered with silver freshly precipitated, to the ionization procedure. Dr. F. Howard Humphris (London) read a paper on the treatment, by modern electro-therapeutic measures, of pathological blood pressure. With d'arsonvalization properly administered much more could be accomplished than with most measures employed for treating hypertension. The current of d'Arsonval consisted fundamentally of a high potential current conducted through a spark gap, two condensers, and a copper solenoid. Dr. T. Lewis closed the morning's proceedings by explaining the method of taking simultaneous electrocardiagrams and heart-sound records, illustrated by lantern slides showing traces of normal heart sounds and the common murmurs.

Friday, July 25th.

Dr. Agnes Savill opened the day's proceedings with a paper describing 3 cases of uterine fibroid which she had treated by means of x rays. Her conclusion was that x-ray treatment had its place when the patient was over 40 years of age and the tumour small. The danger to the skin forbade x-ray treatment in the case of young women and for large tumours. A general discussion then took

place on the subject of gamma radiations in surgery. Sir Alfred Pearce Gould, the opener, said that the primary and fundamental fact was that radium had the great power of checking cell multiplication, and it had recently been shown in the laboratory that the power of radium over cell division was seven times as great when brought to bear upon the cell during its actively dividing period as it was when brought to bear upon it at other times. This seemed to indicate the direct influence of radium upon those unknown forces which immediately concerned the division of a nucleus and the subsequent changes in the cell protoplasm. The next fact of supreme importance was that the power of radium to check and inhibit cell growth was greater in the case of a cancer cell than in that of a normal cell. The third fact was that the radio-activities could and did injuriously influence the normal cell growth. Sir Alfred described the work of Dr. Russ upon the influence of radium on the immunity reaction. It was important to remember that, when used in excess of the amount required to inhibit a cancer, the radium radiations could destroy the power of tumour tissue to produce immunity. Therefore he pleaded for circumspection in dosage. Dr. Robert Abbe (New York) related some remarkable cases of radium cure which had come within his own experience, and also illustrated by means of photographs the power exercised by radium upon seed growth, placing different lots of seeds—hemp and others—at various distances from the radium, and afterwards repeating the experiment by altering, not the distance factor but the time during which each parcel of seeds was exposed. The seeds nearest to the radium were killed, while others a little further away were stimulated in growth, their vigour greatly exceeding that of some control seeds which had not been irradiated at all. Beyond this distance, again, the radium appeared to have a devitalizing effect, and the results were similar in the case of the time experiment. Dr. Abbe considered the future of radium-therapy to be decidedly encouraging. Dr. W. Hill (London) illustrated his technique in the radium treatment of cancer of the oesophagus. The discussion was then adjourned, and several papers were taken. Dr. F. Hernaman-Johnson (Darlington) dealt fully with the indications for radiation before, during, and after operation for cancer. He suggested that even early cases of cancer should undergo a radio-therapeutic preparation. As to post-operative preventive raying, he advised it up to the stage of stimulation of normal tissues, and urged that it should include not only the original tumour area, but also all organs which experience had shown were likely to become the seat of metastatic deposits. Dr. Nagelschmidt (Berlin) made a communication on the electrical treatment of nutritional disorders, affirming that for obesity this offered, not a symptomatic alleviation but a real cure. Dr. G. B. Batten (London) described certain modifications of the Hampson technique in the treatment of ringworm by *x* rays, contending that his new method was as safe as Sabouraud's and more than one-third of the time quicker.

The Section then joined forces with the Section of Gynaecology, and at the combined meeting a paper was read by Dr. C. J. Gauss (Freiburg) in which he described his radiotherapeutic treatment of gynaecological cases. His method, briefly, was to apply a large dose of rays in a short time. This intensive concentration of large doses was brought about by irradiating the various fields in quick succession, reducing the distance of the Roentgen tubes from the body, and increasing the milliampèrage. He also dealt with the treatment by means of radium, and said that he had used mesothorium in the treatment of non-malignant diseases of the female genital organs, especially in fibroma and metritis, but in spite of certain successes with this method the Roentgen treatment retained the first place in non-malignant gynaecological affections. The Section of Electro-Therapeutics met again in the afternoon, when a paper was read by Dr. Frank Fowler (Bournemouth) describing fully his technique in the *x*-ray treatment of cancer, his endeavour being to increase the effective dose which reached the tumour. The previous communications by Sir A. Pearce Gould and Dr. R. Abbe were then discussed by several speakers, including Dr. F. H. Williams (Boston, U.S.A), who expressed the view that radium was safer than the *x* rays, because with the former the output was uniform; Dr. W. Deane Butcher, who emphasized the danger of opening up the lymph spaces to further contagion when taking a specimen in order to confirm the diagnosis; Mr. Hall-Edwards (Birmingham), who was in favour of the use of harder rays; and Dr. Warden (Paris), who urged the burial of radium tubes near the tumour. Dr. Abbe replied, and the proceedings of the Section concluded with a cinematograph demonstration by Mr. Hall-Edwards, the film illustrating the movements of the stomach.

SECTION OF GYNAECOLOGY AND OBSTETRICS.

Thursday, July 24th.

THE second meeting was devoted to a discussion on affections of the urinary tract complicating pregnancy. This was opened by Sir Halliday Croom (Edinburgh), who commenced by insisting on the routine examination of the urine every three weeks till the seventh month, and then every two weeks till term. In cases showing any symptoms of toxaemia he considered that daily examinations were advisable. Discussing pyelitis gravidarum, he noted the right-sided frequency, and attributed this to the greater liability of the right ureter to pressure at the brim of the pelvis. The *B. coli* was the most common organism, and infection could travel both upwards and downwards. The prognosis for the mother was good on the whole, but he preferred in severe cases to induce labour rather than to operate on the kidney. The speaker proceeded to discuss the toxaemias of pregnancy, and briefly commented on the original work of Williams, Swayne, and Williamson on acidosis in pregnancy and the various nitrogen fractions. Diabetes in relation to pregnancy and the treatment of such cases in labour were brought forward; chloroform was dangerous, and labour should be completed with as little exertion to the patient as was possible; alkaline infusions were of service. Sir Halliday Croom concluded by recommending that the biochemistry of pregnancy should receive more attention, and that for this purpose the pre-maternity hospital or ward was an institution greatly to be desired. He foreshadowed such a ward in Edinburgh, and gave credit to Drs. Ballantyne and Routh for their efforts in this direction. Dr. Herbert Williamson (London) confined his remarks to pyelonephritis of pregnancy. He pointed out that right-sided infection was always commoner even apart from pregnancy, and did not believe that mechanical obstruction was a factor. He did not consider that the organisms were ascending a column of stagnant urine, and he implicated the blood stream and bowel as factors in certain cases. Indications for treatment were summed up as: Rest in bed, light mixed diet, copious fluids by the mouth, urinary antiseptics, and free purgation. He would induce labour if the condition remained serious after ten days of treatment; he had not convinced himself of the utility of vaccines, which should, if tried, be in all cases autogenous. Dr. H. O. Nicholson (Edinburgh) commented on the anomaly of raised blood pressure with scanty urine in pregnancy toxaemia, and discussed the vaso-constricting principle which alone could cause this. Dr. Edge (Wolverhampton) considered that the infection was an ascending one through stagnant urine. He was inclined to think that it might be justifiable to sterilize cases where a severe infection recurring in successive pregnancies jeopardized life. Dr. Leith Murray (Liverpool) discussed some of the problems of acidosis, and drew a distinction between that condition and acid intoxication. He insisted that the increased ammonia fraction in pregnancy was not a measure of acidosis, but included some increase resulting from the liver lesion. He advocated Hart's simple quantitative method for estimating these acid bodies. Personal experience had convinced him of the merit of autogenous vaccines. Drs. Bramwell, Dickinson, and Mowbray also spoke, and Sir Halliday Croom briefly replied.

Friday, July 25th.

The proceedings for the third day were opened by Dr. A. E. Giles (London) with a plea for early operation on uterine fibroids. Arguments in favour of early operation were discussed under five headings: (1) The author's statistics showed age-incidence to be of no importance as

an actual indication for operation, although it had a definite bearing on the nature of the operation to be preferred. (2) Myomectomy was more desirable than hysterectomy, and his figures demonstrated the increased opportunity of doing this under 30 years. (3) Dangerous complications amounted to 43 per cent. of all complications, and the incidence was much greater over 50 years. (4) High mortality was no longer an argument against operation. (5) Finally, there was an uncertainty of diagnosis which made it possible that grave conditions urgently requiring operation might be mistaken for simple fibroids. The President, Drs. Purslow, Dickinson, and McIlroy discussed the paper, and Dr. Giles, in reply, gave the indications for myomectomy, expressed himself as satisfied with the after-results in cases chosen on these lines, and indicated that small fibroids causing no symptoms should be left alone, and that the patient should not be told of them. Miss A. L. McIlroy, Dr. H. F. Watson, and Miss J. H. McIlroy, communicated a paper on the significance of the Wassermann reaction in gynaecological diagnosis—100 non-selected cases, mainly from the Gynaecological Out-patient Department of Glasgow Royal Infirmary. Of these only 6 could have been judged to be suffering from syphilis so far as history or physical signs went, yet 49 gave a positive, 3 a doubtful, and 48 a negative reaction. In 7 of the negative cases, the children who were examined were positive. These results emphasized the importance of definitely excluding syphilis from causation in gynaecological ailments. Positive results had also been obtained in certain cases of menorrhagia and dysmenorrhoea in young women. The proportion of positive results was not appreciably increased in cases of miscarriage and stillbirth. Drs. Hans Schlimpert and A. Leitch inquired as to the technique, and the latter considered that even 5 per cent. of positive results in an average population was an overstatement. Miss Martindale also spoke, and in reply Miss McIlroy stated that the method adopted was that of Browning and Mackenzie, and that the results had been supervised by one or other of these. Dr. Hans Schlimpert (Freiburg) summarized the work done by Dr. Hendry and himself on Abderhalden's dialytic method of serum diagnosis of pregnancy. The theory underlying the test was reviewed and their results given. In 79 experiments on animals, including cross experiments, there had been only one failure. In human beings, so far, the results were much less accurate, but were clearly improving as better technique was developed. Dr. Hendry (Glasgow) enlarged on some points in technique, and Drs. A. Leitch and Leith Murray also spoke. Finally came a short note by Dr. T. H. Ionides (Brighton) on general peritonitis due to the appendix and complicating pregnancy, and a racy paper by Dr. R. L. Dickinson (New York) on the advantage of specialists of various orders combining for the purpose of clinical tours.

Section of Laryngology.

Thursday, July 24th.

The President introduced for discussion the question of the care of patients after operations on the nose and nasopharynx. There was an excellent attendance, and from the nature of the subject most of the remarks of both the readers of the papers and of those who took part in the discussion had reference to prophylaxis. There was considerable difference of opinion upon matters of technique, Dr. Tilley advocating in some cases a warm spray to be used prior to operation with the object of cleansing the nasal passages. Other speakers followed Dr. Mayo Collier in objecting to the use of spray or douche. The douche, however, found few supporters other than in exceptional cases. The prophylaxis of osteo-myelitis after frontal sinus operations was discussed, and methods for its prevention referred to, Sir R. Woods advocating the removal of all necessary bone before opening into the affected mucous lining. The question of packing the nasal passages after operation gave rise to considerable differences of opinion, some speakers preferring rubber sponge, others gauze, while Dr. Mayo Collier and others objected strongly to packing of any description. The relative advantages and disadvantages of the cautery and snare and conchotome for the removal of portions of the turbinates were fully discussed. Dr. Kelson considered that the use of cotton-wool in the vestibule as a filter after operative interference was useful, and several speakers advocated the sterilization of this area prior to intranasal interference by various antiseptics, painting with iodine being generally favoured. Attention was also called to septic conditions of the mouth and fauces as a factor in causing subsequent sepsis, and a case was instanced by Mr. Sydenham of a death from meningitis after a simple intranasal interference due to the anaesthetist having a septic throat. The previous administration of sodium salicylate or aspirin was advocated. Dr. Watson-Williams suggested the use of strong solutions of cocaine as less dangerous than weaker ones, a smaller area being acted upon and really less of the drug absorbed. Drs. Crimp, Syme, Whitelocke, Birkett, Child, Maclay, and Jackson, amongst others, took part in the discussion. Professor Owen Richards (Cairo) then read a paper on rhino-scleroma, and illustrated it by lantern slides. Very little discussion followed, since the disease does not occur in this country. The day's work included also two demonstrations, one by Dr. W. Hill (intratracheal anaesthetization), the other by Dr. Watson-Williams (accessory nasal sinuses).

Friday, July 25th.

The last day's work opened with a paper by Mr. J. F. O'Malley on suggestive points of analogy between otosclerosis and arthritis deformans. The differences and similarities of the diseases were considered, numerous statistics being given. The questions of age incidence, sex, heredity were entered into in some detail. Racial characteristics, climatic conditions, and, in short, every factor common to the two conditions were investigated. The paper showed much original investigation, but some of the inferences deduced and comparisons instituted were rather laboured. The final conclusion drawn was that the main factor underlying the change was a chemical one. The paper was subsequently discussed by a few members who congratulated the reader of the paper. It was generally considered that the cases under discussion were to be differentiated from chronic adhesive processes, which were always the result of catarrh. Dr. Seccombe Hett then read a very interesting paper upon the physiology, anatomy, and embryology of the palatine tonsils. At the outset he limited his remarks to their anatomy and embryology, as his results in physiology were not yet ready for publication. He traced the history of the tonsil up from the fish through the amphibian to man, illustrating his remarks by diagrams showing its embryonic development. The tonsil was shown to be the development of the second dorsal thymus of the branchial cleft. The paper was discussed with reference to its practical application in the removal of tonsils and adenoids. The view of the tonsil's uselessness after the first few years of life was combated, and it was not generally agreed that tonsils were functionally useless and therefore to be regularly removed, which was the opinion of the author of the paper. Amongst the members who took part in the discussion were Drs. Jobson Horne, Scott, Davis, Spicer, and O'Malley. Dr. Hett replied to the various questions asked by those who took part in the discussion. A paper by Dr. Maurice of Paris on his apparatus for the re-education of the powers of hearing followed; and finally Dr. Jobson Horne read a paper on tumours of the ventricle of the larynx. He discussed the various tumours of this neighbourhood, including the cystomata which are rarely met with in man. Malignant growths were only just referred to, as not coming within the purview of the paper. The class formed by the granulomata was considered. Some lantern slides illustrating the remarks of the speakers were then shown. Subsequent speakers desired to know more about the treatment, but in his reply Dr. Horne stated that treatment opened too large a field for discussion.

Section of Medicine.

Thursday, July 24th.

Dr. A. P. Luff, in opening a discussion on fibrositis and muscular rheumatism, described the former as a painful local inflammatory hyperplasia occurring in various fibrous tissues of the body. It was very apt to recur, and was commonly called "rheumatic." Possibly it was due to bacterial infection, but in most cases was produced by

a toxaemia, assisted by various contributory causes. Confinement to bed might be necessary; in less severe cases the part should be rested. Salicylate was of little use; aspirin was very valuable for pain; potassium iodide was the most valuable drug; fibrolysin had a very limited use. Local treatment might be by external applications—hot fomentations, a mixture of equal parts of chloral, camphor, and menthol, etc.—counter-irritation, heat, and electrical treatment. He emphasized the value of local heat, especially dry, radiant heat combined with ionization. In lumbago the static current might be substituted for ionization. Massage was useful, but should be applied not to the affected part itself but around it. It should not be general massage. He referred to spa treatment, diet, and underclothing, preferring for the latter a porous linen fabric. Dr. F. H. Humphris attributed value to electrical treatment in fibrositis, especially light and wave treatment. Dr. Alexander Morison said that prognosis was largely influenced by the social position of the patient. Cases of fibrositis should be separated from infective conditions, such as those due to the gonococcus. He would regard fibrositis as essentially an afebrile state, and due to nutritional and metabolic disorder. Warm baths and heat in other ways were valuable. Visceral disease was generally absent. It was desirable to avoid the causation of pain in the treatment. Dr. G. Parker had been struck by the frequency of brachial neuritis. There were very definite tender nodules at various places over the arm and shoulder in cases of fibrositis in those regions, and similar nodules in other places with different types. He had found great benefit from rest and heat, and local application of salicylic acid, menthol, and lanolin ointment. Dr. Bailey emphasized the value of dry heat (which should be of sufficiently high temperature) and ionization, using iodine. Dr. Crofton, Dr. Preston King, Dr. Marion Gilchrist, Dr. Langdon Brown, Dr. Heinemann, Dr. Pridmore, Dr. Halls Dally, Dr. Joshua Powell, Dr. Blackburn, Dr. Warden, and the President (Dr. Hobhouse) also spoke, and Dr. Luff replied.

Friday, July 25th.

Work on the concluding day commenced with a demonstration by the President (Dr. E. Hobhouse) of a number of lantern slides lent to him by Dr. Gougerot, of Paris. They dealt with the diagnosis of sporotrichosis from syphilis and tubercle. Speaking of them, Dr. Hobhouse said there were three clinical varieties of sporotrichosis which presented difficulties, and culture was the easiest and most rapid way of arriving at a precise diagnosis. Dr. Preston King, in a paper on the differentiation of chronic arthritis, suggested that the cases occurring in early life should be called "rheumatoid arthritis," those in later life "osteo-arthritis." The two conditions were different, the former being more acute and accompanied by constitutional disturbance. Although distinct clinically, he did not regard them as distinct diseases. Dr. Walter Broadbent said he had found vaccines valuable and also polyvalent antistreptococcic serum by the mouth. The latter then read a paper on the heart as affected by the stomach. The stomach might affect the heart by reflex nervous effects, pressure, or by poisons in digestive disorder. The most common reflex effect was palpitation. In practice treatment of stomach and nerves was more favourable than treatment of the heart itself. Other effects were paroxysmal tachycardia, intermittency of the pulse, and pseudo-angina pectoris. True anginal attacks might also be brought on by gastric distension. In fatty heart gastric distension was also of great importance. Dr. Edgar Duke, Dr. Robert Hutchison (London) and Dr. R. R. Wade took part in the discussion. Dr. Macmurdo Mackinnon read a paper on the blood pressure in aneurysm. This was based on observations on 40 cases of aortic aneurysm investigated at the Seamen's Hospital, Greenwich. The blood pressure on admission was invariably considerably higher than subsequently. The general average was above normal. A difference of pressure of 5 or even 10 mm. Hg between the two arms was of little importance. A marked difference of from 15 to 20 mm. or so was strong evidence of the presence of aneurysm if it persisted. There was reason to suppose that potassium iodide reduced the blood pressure. The paper was discussed by Dr. Langdon Brown, and, after Dr. Mackinnon had replied, the President declared the meeting at an end.

Section of Navy and Army, and Ambulance.

Thursday, July 24th.

In a paper on the use of kinesitherapy in the after-treatment of injuries received in war, Dr. Durey said that owing to the changed conditions of military surgery and the general adoption of conservative methods a large number of wounded men were now discharged from the military hospitals with more or less useless limbs. By the application of massage and suitable passive movements much might be done to restore the utility of stiff joints and of muscles in which movement had become restricted by cicatricial tissue. The treatment to be successful should be begun as soon as possible, and must be under the supervision of a medical officer who had made a special study of this branch of surgery. A specially trained staff of masseurs was required; hence he strongly advocated the creation of special departments of kinesitherapy in all military hospitals. Colonel J. Turton thought the subject had perhaps not received sufficient attention in this country; but massage could not very well be begun till the wound had healed, and it would be impossible to carry out this treatment in field medical units. Lieutenant D. G. Kennard, R.A.M.C.(T.F.), describing a proposed light ambulance for yeomanry regiments, said he strongly advocated the adoption of some form of ambulance wagon which should belong to the regiment and accompany it wherever it went. The type he suggested was a four-wheeled wagon, weighing 5 cwt., and carrying two stretchers, two bearers, and one man sitting on the box beside the driver. The wheels, he said, were of equal size, made of hickory, the body well sprung, and the vehicle could travel across any country without upsetting. One horse could draw the wagon with ease, and the patients travelled in much greater comfort than in any other form of horse-drawn vehicle. Five of these wagons were sent to the Balkans, and were found most satisfactory during the recent campaign. Their cost was from £45 to £50. Major J. W. Houghton, R.A.M.C., speaking of spinal analgesia in military service, said he had used it in 600 cases, of which 296 were major abdominal operations. In no case did he fail to enter the dural sac; in every case the injection was followed by adequate analgesia; in 6 lengthy cases the analgesia did not last till the end of the operation, and chloroform had to be used for the final stages. As regards the after-effects, in 26 per cent. of the cases slight but only temporary faintness was experienced soon after the injection; 6 per cent. of the patients vomited on returning to the ward; slight headache was complained of in 28 per cent. of the cases. This method of inducing analgesia dispensed with the necessity of having an anaesthetist, which was a great advantage in military surgery in the field. To obtain the best results a certain amount of experience, together with strict surgical cleanliness, were essential. Deputy Surgeon-General P. B. Handyside, R.N., at the request of the President, offered a few remarks on the subject of hospital ships. He pointed out that at present there was only one hospital ship, the *Maine*, which was used in the South African war before she was handed over to the navy. Another ship was being fitted out for this purpose by the Admiralty, but he was unable to give any particulars in regard to her. It was difficult to decide on the most satisfactory kind of ship to employ for carrying sick and wounded. It might be a "carrier"—that is, one merely designed to transport invalids for a short distance—or it might be a fully equipped floating hospital. The choice depended on the probable locality of an action and the distance from the shore hospitals. One of the most difficult problems which had to be solved was the embarkation and disembarkation of helpless patients at sea. The Japanese hospital ships, although small, were thoroughly equipped, and proved most useful during the Russo-Japanese campaign.

Section of Neurology and Psychological Medicine.

Thursday, July 24th.

Dr. Risien Russell, opening a discussion on vertigo, said aural defect was its commonest cause. Long-standing cases of aural vertigo frequently became neurasthenic, but neurasthenia might itself simulate aural vertigo; but he distinguished therefrom by the fact that other

neurasthenic symptoms preceded the onset of the aural symptoms. The latter, too, were usually bilateral, and referred to the inside of the head, and the tinnitus was associated with hyperacuity of hearing. Vertigo due to arterio-sclerosis often simulated aural vertigo, both commencing at the same age, but in the former the symptoms were bilateral, and not accompanied by loss of hearing; a sense of rotation of the patient or surrounding objects indicated true vertigo. Certain cases of vertigo, in his opinion, were due to acute vascular lesions. Vertigo due to intracranial tumour could usually be distinguished by the presence of other symptoms. Ocular vertigo, except in cases of sudden paralysis of ocular muscles, was seldom so severe as aural vertigo. Vertigo of gastric or hepatic origin might be very severe, but could generally be distinguished by the previous history of gastric disturbance and the absence of any aural or cerebral signs. It was extremely difficult to distinguish between vertigo and minor epileptic attacks, provided there were no other symptoms of epilepsy. Deafness or fullness in the ears, and the persistence of tinnitus after the attack, contra-indicated epilepsy. Vertigo occurred as a symptom of tumour situated in the lateral recess or cerebellum, but could be recognized by the presence of the typical local signs. Vertigo was frequently a symptom in disseminated sclerosis. In aural, arterio-sclerotic, and epileptic vertigo bromide was the most serviceable drug and preferable to hydrobromic acid. In neurasthenic cases treatment by means of a rest cure had proved most effective. Dr. Harry Campbell, who concurred with most of Dr. Russell's remarks, asked whether Dr. Russell had had any experience of lumbar puncture or electro-therapeutic treatment in such cases. Mr. Sidney Scott said that the aurist, when confronted with a case of vertigo, first excluded peripheral causes and then the central. He had had a number of cases sent to him as cases of aural vertigo in which he could find absolutely no aural defect. He did not see why these cases were called aural vertigo, and attributed them to some condition at present unknown. He did not think bromide was specially serviceable in vertigo. Dr. Leonard Guthrie thought vertigo was much more common in children than was generally supposed, though they rarely complained of it even when suffering from cerebellar tumour. Dr. Aldren Turner expressed the opinion that many cases of vertigo were epileptoid in character. Professor Bradbury said that from the point of view of a general physician gastric disturbance was the commonest cause of vertigo, that in certain diathesis, specially gouty, it was very common, though he admitted that arterial changes might play a part. He had found antisyphilitic treatment beneficial in many cases. Professor Ashley Mackintosh said that vertigo occurred in 25 out of 110 cases of disseminated sclerosis which he had collected; he wondered if there were any connexion between vertigo and nystagmus. As regards treatment, he found the addition of belladonna beneficial in many cases, and had found large doses of hydrobromic acid efficient when bromide had failed. The President, Dr. Colin Russell, Dr. Shore, Dr. Fisher, Dr. Helen Boyle, and Professor Anderson and Dr. Grainger Stewart also took part in the discussion.

Friday, July 25th.

On the concluding day Dr. James Taylor, the President, was again in the chair, and some half-dozen papers were read and discussed. With two exceptions they related to questions of psycho-therapeusis, Dr. M. D. Eder giving an account of the present position of psycho-analysis, while Dr. William Brown recorded a case of extensive amnesia of remote date which had been cured by hypnosis preceded by psycho-analysis. The treatment of alcoholism by suggestion was considered by Dr. Hugh Wingfield, and Dr. T. A. Williams set forth some of the truths and fallacies connected with mind healing. In a joint paper Drs. William Boyd and G. L. Brunton set forth the results of their investigation of the blood and cerebro-spinal fluid in two cases of mania; and Professor R. J. Anderson, of University College, Galway, read some notes on reflex action. The various papers were discussed by Drs. Helen Boyle, Constance Long, H. Crichton Miller, John Mills, W. H. Butter Stoddart, Fisher, Shore, and Dr. Hubert Bond.

Section of Ophthalmology.

Thursday, July 24th.

Dr. F. W. Edridge-Green read a criticism of the Board of Trade eyesight test, in which he condemned the present condition of affairs, and proposed a resolution to the effect that the question should be reopened. This was seconded by Mr. Devereux Marshall and Mr. Bishop Harman, supported by Mr. Harrison Butler. The President (Mr. T. H. Bickerton) also strongly supported the motion, but expressed an opinion that the only way to make any impression was to ask questions in the House of Commons. Mr. Herbert Parsons did not approve of the resolution, and defended the Board of Trade, but the motion was carried with one dissentient. Mr. T. Harrison Butler, in opening a discussion on the treatment of chronic dacryocystitis, condemned the use of probes, and advocated the use of the syringe and the removal of the lacrymal sac. Colonel Elliot gave an account of 900 cases, in 78 per cent. of which the sac was removed entire, and only 0.55 per cent. required further treatment, while many of them were acute cases in which the difficulties of the operation were much greater. He preferred general anaesthesia, and the average time taken over the removal of the sac was seven to eight minutes, but often was much less. He described in detail the operation he advocated. Primary union failed in less than 2 per cent. of all cases, acute and chronic. Mr. C. Higgins strongly recommended Totti's operation. It consisted of removal of the sac and the transplantation of the canaliculi into the nose. No canaliculus should be slit, and styles and probes should be abolished. Dr. McReynolds (Texas) said that all methods produced good results in some cases. Mr. S. H. Browning thought vaccines should be more frequently employed. Streptococcal and staphylococcal injections reacted very well to this treatment, and the results were so good that he thought vaccines should be used in all cases. Streptothrix infection was more common than was usually thought. Dr. Ellett (Memphis) and Dr. Weeks (New York) having spoken, Mr. A. J. Whiting said that cases with diverticula were difficult to distinguish from cases of ethmoidal disease. Meningitis had been known to follow operation. Mr. Inglis Pollock thought that in private practice it was rarely necessary to excise the sac, for usually the patients came for earlier treatment. Mr. Bishop Harman considered that the canaliculi should be extirpated in all cases in which the sac was removed. Mr. Devereux Marshall thought that streptothrix was nothing like so uncommon in the canaliculus as it was thought to be. Mr. Charles Wray regarded local anaesthetics as very dangerous, and he knew of a fatal case. Sacs were too frequently removed, and he advocated the use of styles. Mr. S. E. Whitnall spoke of the anatomical conditions present. The President was strongly opposed to the removal of the lacrymal sac, and advocated the use of styles. If anything were to be removed, it should be the lacrymal gland. Mr. Inglis Pollock gave a demonstration on persistence of the nerve plexus of the iris after the excision of the ciliary ganglion of the superior cervical sympathetic ganglion.

Friday, July 25th.

Mr. Malcolm L. Hepburn (London) opened the discussion on the question of excision in cases of injury to the eye, putting the subject under four heads: (1) The excision of the eye immediately after the injury, (2) excision within a short time, (3) excision when the fear of sympathetic ophthalmia was present, (4) excision after the development of sympathetic. In a suppurating eye it was safer to eviscerate if the eye should have ruptured or should rupture during the operation be feared. Should there be a hypopyon ulcer he advocated the performance of an iridectomy should the cornea have perforated. If a foreign body were present the magnet was desirable to get it into the anterior chamber previous to removal. Should the lens be wounded it should be removed. Should an eye still be irritable in six or eight weeks, sympathetic inflammation was a great danger, and if it were blind and painful it should be excised. Mr. R. Affleck Greeves (London) discussed the matter from a pathological point of view. The appearance here was typical in sympathetic cases. In those cases in which sympathetic inflammation occurred years after the original injury it was very likely that some slight recent injury had taken place. Not a single case of

sympathetic ophthalmia had occurred at Moorfields during the last fifteen years in eyes which contained foreign bodies. He considered an eye which contained a foreign body was of no use for seeing purposes for any length of time. Mr. S. H. Browning (London) discussed the blood counts in cases of perforating injury. The important point was the increase in the large mononuclear cells. The increase always took place at the expense of the polymorphs. Salvarsan had been found of great benefit in all protozoal diseases. In sympathetic cases there was marked change in the blood count, and the disease was much modified and often cured. A normal count did not exclude the disease, but a positive count was most suggestive. He gave illustrative cases which showed immediate changes in the blood count to normal after the injured eye was removed. Differential blood counts should always be made in cases of eye injury, and salvarsan should be used in all cases of sympathetic ophthalmitis. Mr. N. Bishop Harman (London) discussed the question of sympathetic occurring in children, and gave a summary of 16 children who were blinded by the disease, and strongly advocated excision in dangerous cases. Mr. E. E. Maddox (Bournemouth) thought that the situation of the original injury in the eye was most important. He never knew a case of sympathetic occurring in an eye with plus tension. If an eye could be made hard artificially it might be useful. Pyridin was capable of doing this, but it was very painful to apply. Mercury had a great effect, and many eyes could be saved by means of the actual cautery and conjunctival flaps. Colonel Elliot (Madras) disapproved of the use of the cautery. Antiseptic treatment was most important, but no more active surgical treatment should be adopted than was possible. No unnecessary risk should be run in trying to save a hopelessly injured eye. On acccunt of the intense aversion that the natives of India have to losing an eye, other operations had been suggested. He advocated evisceration and optico-ciliary neurectomy. Dr. McReynolds (Texas) had found many more cases occurring after some perfectly successful operation than after the retention of a foreign body. Mr. Harrison Butler enunciated the views held in Germany, and gave his experience in Jerusalem. Mr. Devereux Marshall congratulated Mr. Browning on his work, and thought that the sooner a suppurating eye was excised the better, and he had no fear of the operation producing meningitis. Mr. Reeve (Toronto) always excised suppurating eyes, and he had never seen anything but benefit result. He paid tribute to the work of Mr. Browning. He advocated the performance of iridectomy and the removal of injured lens matter. Mr. Taylor (Brighton) had seen two cases of fatal meningitis following excision of suppurating eyes. Mr. Charles Wray (Croydon) preferred evisceration to enucleation. Colonel Pridmore, Mr. Whiting, and Mr. Inglis Pollock made remarks, and the President summed up. Mr. A. F. MacCallan described an operation for ectropion of the lower lid. Mr. T. Harrison Butler (Leamington) read a paper on the punch operation for glaucoma. It was discussed by Mr. Brailey, Colonel Elliot, and Mr. Bishop Harman, who advocated Herbert's operation with his (the speaker's) twin scissors. Dr. McReynolds described a trephining operation done with an ordinary knife. Mr. Hepburn thought the keratome was a difficult instrument to use and very dangerous in a shallow anterior chamber. The President said that the whole world was under an obligation to Colonel Elliot for his work on glaucoma.

SECTION OF PHARMACOLOGY, THERAPEUTICS, AND DIETETICS.

Thursday, July 24th.

THE proceedings of this Section began by a discussion on anaphylaxis, held jointly with the Section of Bacteriology and Pathology, an account of which is given in the report of the meeting of the latter Section. The Section of Pharmacology then heard a paper by Dr. F. W. Price (London) on the action of digitalis on the blood pressure in man. The reader had previously reported cases illustrating the effect of digitalis in cases of cardiovascular disease. Those experiments he now supplemented by an investigation of the action of this substance on the blood pressure of a series of cases with no recognizable cardiovascular disease. Digitalis was given under carefully controlled conditions for periods of seven days or longer. The result was to show that digitalis (in doses of 45 to 60 minims of the tincture per day) produced no definite effect on blood pressure in either group of cases. In the discussion which followed the Vice-President, Dr. Uhthoff (Hove), and Drs. Cow (Cambridge), Gunn (Oxford), and McWalter (Dublin), took part. Dr. Price replied to the points raised in discussion.

Friday, July 25th.

The last day's proceedings began with a paper by Dr. H. F. Winslow on error in dietetics. He confined himself chiefly to the consideration of the taking of liquids along with meals, a practice which he condemned as being contrary to custom among the lower animals and also, as he had found, to the well-being of man. The paper was criticized by the Vice-President (Dr. Uhthoff) and Drs. Maurice Craig and Bernard Smith. In opening the next discussion, which dealt with the use and abuse of hypnotics, Dr. W. H. Willcox set forth the general indications for the use of hypnotics, and gave his experience of their value in detail. He also suggested precautions which should be taken to prevent their abuse. His comprehensive introduction was successful in eliciting a large amount of discussion, and that the subject was popular was evidenced by the number of members present. He was followed by Dr. Maurice Craig, Professor Bradbury, and Dr. Uhthoff, who compared their experiences with those of Dr. Willcox in regard to various hypnotics. In a further discussion Drs. Morrison, Blackburn, Davy, Hunt, and Gunn took part. Dr. Willcox replied to the various points raised. On the whole there was considerable unanimity in the opinions expressed with regard to the various hypnotics, the older ones finding favour with most speakers, though there was some disagreement, especially in regard to the relative safety and value of sulphonal and veronal. Dr. Muthu then read a paper on the treatment of pulmonary tuberculosis, with special reference to the continuous inhalation method, which he strongly advocated in combination with other remedial measures. He showed a convenient mask which he had devised for carrying out inhalation treatment, and also the formulae of various antiseptics which he had found of value. Dr. Willcox contributed to the discussion. The last business of the Section was a paper by Dr. Alexander Haig on "the acid child" in relation to errors in diet, in which paper he expounded and amplified his well known views on uric acid metabolism as affected by diet and drugs.

SECTION OF STATE MEDICINE.

Thursday, July 24th.

THE second day's session was occupied in a discussion on port sanitary administration and the importation of disease, which was opened by Dr. Herbert Williams, M.O.H., Port of London. He first dealt with the facilities for the introduction of infectious diseases into this country, pointing out that in many parts of the world the standard of hygiene was lower than in this country, and that certain infectious diseases were endemic there. In some places abroad people could even be seen walking about the streets with the scabs of small-pox on their faces, and cases of plague and cholera were often concealed. On board ship the conditions were particularly favourable to the spread of infectious disease. In the case of small-pox this was due to the long incubation period and the equivocal nature of the symptoms. Then, on every ship measured by any standard of accommodation followed ashore there was overcrowding and insufficient ventilation, even in the passengers' cabins. The sanitary conveniences, too, were of the most primitive type, and for various reasons it was natural that pulmonary tuberculosis should be common amongst seamen. The drinking water on vessels might produce cholera or enteric fever by having been drawn from infected sources. And, of course, plague was carried by infected rats on board ships. There was little difficulty in getting information as to the existence of infectious disease on vessels when a surgeon was carried, but in the absence of a surgeon the master of a vessel could not be expected to diagnose every case of infectious disease, and if he wished to hide the existence of such disease could easily do so. Major Jackson (R.A.M.C.) referred to the conditions of life of seamen on shore, which he said were in many

instances as bad as those existing at sea. Dr. Foy, Port Health Officer, Rangoon, considered that a medical inspection of every vessel arriving in port appeared to be the only really effectual measure for preventing the entrance of infectious diseases into ports. This method had been objected to on account of its expense, and because of the apparently few cases discovered by this means. In his own experience as to plague during eight years, the ratio of cases discovered was only 1 in 90,000 inspected, yet the discovery of even such a small proportion of cases was well worth the trouble and expense involved. Dr. Gilbert E. Brooke (Singapore) having described the points that he considered the sanitary administration of a port should cover, the President (Dr. Hope, Liverpool) said that in his opinion the chief importance of the discussion was that it emphasized a fact which was very apt to be overlooked by many people—namely, the immense influence which was being daily exercised by port sanitary authorities all over the kingdom in preventing the introduction of dangerous infectious disorders into this country. He thoroughly agreed with Dr. Brooke's suggestions as to the provision of a better system of international procedure, and more efficient bureaus of information. The meeting concluded with a paper by Dr. F. Arthur Foy, Port Health Officer of Rangoon, on deratization in the port of Rangoon.

Friday, July 25th.

The subject for discussion on July 25th was the necessity for educating the general public in matters relating to the public health. This was opened by the President, Dr. Hope, M.O.H. Liverpool, who referred to the enormous shrinkage in the mortality from all diseases, especially from zymotic fevers, during the last thirty years, as shown by the Registrar-General's figures. He looked upon it as remarkable that the older universities—those seats of learning which must have been familiar with Greek culture and the Mosaic codes of sanitation—should have for so long maintained their attitude of apathy towards sanitary reform. It was left to the University of Edinburgh to be the pioneer in this matter, and to be the first university to establish preventive medicine on a scientific basis and to give degrees on the subject. The Universities of Manchester and Liverpool put these scientific subjects in the forefront of their curriculum, and they were soon taken up by Dublin and Cambridge, and now every university in the country had its Chair of Public Health or Hygiene. But it was necessary to stimulate a healthier public opinion, and he thought one of the best methods of doing this was by exhibitions of all the appliances and improvements connected with modern sanitary reform. He specially referred to the great exhibition recently held in Dresden, which had been a great success. He called attention to the recent letter in the *Morning Post* as to the advisability of the appointment of a Royal Commission to deal with the subject of venereal disease, and proposed the following resolution, which was carried unanimously:

> That a recommendation be forwarded to the Council of the British Medical Association endorsing the views expressed in the circular letter recently issued to the metropolitan public press by recognized leaders of the medical profession in regard to the question of venereal disease, strongly advocating the appointment of a Royal Commission to inquire into this subject, which so closely affects the public health.

Professor Kenwood (London) said that the aim of hygienic teaching was the formation of hygienic habits, but emphasized the importance of dealing with the prospective mother while at school. With regard to the question of clean milk, it was largely in the hands of the general public. There was no sentiment in commercial matters, and the public would not be supplied with a pure milk until they were educated up to the necessity of demanding it. With regard to housing reform, the most effectual cure for bad landlords was better tenants, and individuals without hygienic habits were little benefited by sanitarily constructed premises. Dr. T. A. Williams (Washington, U.S.A.) gave details of the methods which had been adopted in the District of Columbia by a Committee of Public Instruction. Briefly, these consisted of the institution of lectures, conferences, bulletins in hygiene, and letters written by recognized authorities to the public press. Some of their chief difficulties were found in overcoming the stupidity of the older school of medical men, the vested interests of that class of doctors, more common in America than in this country, who owned drug stores; and what he might call the "bottle cult" of the general public. Dr. Murray Leslie (London) agreed as to the great educational value of exhibitions, such as the tuberculosis exhibitions held in different parts of the country, and said that he had found the cinematograph a most important aid in inculcating practical lessons in elementary hygiene. He had found the premium method, so much used in France and Germany, also of considerable service. Dr. F. E. Wynne (M.O.H., Wigan) considered that the work of the medical officer of health was primarily education, as he had to educate his own committee, property owners, employers of labour, and others with whom he was brought in contact. He had found it less difficult to educate the general public than it was usually thought to be, as was shown by the comparative ease with which the idea of the open window was assimilated by the consumptive. Dr. McWalter (Dublin) thought that it was most important to develop what he might call a health conscience in the general public. The main ideal of medical officers of health appeared at present to be the prolongation of life and the decline of the death-rate, but he thought they should aim at broadening the lives of the healthy members of the community rather than increasing the span of years of the invalids and inefficients. Major Jackson also spoke, and the President closed the discussion with a few appropriate remarks.

SECTION OF SURGERY.

Thursday, July 24th.

ON the second day the Section discussed the interesting and important subject of internal derangements and injuries of the knee-joint. At the outset, Mr. Thelwall Thomas, President of the Section, ruled that it would be competent to discuss not only lesions of the semilunar cartilages and ligaments, but also such lesions as fractures of the tibial spine and injuries to bones within the joint. Mr. A. M. Martin (Newcastle-on-Tyne), who introduced the subject, devoted the greater part of his paper to the injuries of semilunar cartilages and their treatment. He had operated on over 500 such cases, and he had arrived at some definite conclusions. In all but 38 the lesion was of the internal semilunar cartilage. It was produced by rotation or twisting movement of the body, the leg being fixed and the knee flexed. The inner edge of the cartilage was nipped between the articular surfaces and the edge torn away. Sometimes the split was through the cartilage in a transverse direction. The treatment was operative only, reaching the joint through a transverse incision, and removing the whole of the affected cartilage. Invariably the patient went out of hospital able to walk in eight or ten days, and soon, by aid of active and passive movements, was able to resume work. He had removed both internal semilunar cartilages at one time, and had also taken away both semilunar cartilages from the same knee with perfectly good ultimate functional results, so that patients could fearlessly use the joints both in work and play. Mr. A. J. Walton, whose contribution was read in his absence, was entirely opposed to the theory that the lesion of the semilunar cartilages was produced in the attitude of flexion. Mr. R. H. A. Whitelocke called attention to the necessity for *x*-ray examinations in all cases of sprain of the knee-joint. He had frequently observed by this means avulsion of the tibial spine. A haemophilic patient whose knee was injured bled for nearly a week after operation; haemorrhage was brought to a stop only after injection of horse serum. Dr. T. K. Dalziel drew attention to a condition which he called pulverization of the articular cartilage in young patients, in which portions of the cartilage were forcibly pounded off the main mass. Mr. E. Finch's investigations as to the attitude of the limb showed that in 60 cases of miners and football players the majority gave a history of sudden extension. Mr. Cotterill disagreed with the opener of the discussion in employing an oblique rather than a transverse incision, in not removing the whole cartilage, and in not always recommending operation in recent cases. Mr. Hey Groves, Mr. MacAdam Eccles, Mr. C. Woodward, and the President also contributed to the discussion. Mr. Hey Groves then gave a lantern demonstration of some results obtained by

him experimentally in the operative treatment of compound and comminuted fractures by means of a fixing and extension apparatus of his design. Dr. T. K. Dalziel showed specimens and read notes of some cases of chronic interstitial enteritis which he had met with. The pathology was still obscure, the bacteriology negative.

Friday, July 25th.

"Prostatism: the pathological basis of operative treatment," was the title of an elaborate and interesting paper, illustrated by lantern demonstration, by Mr. Henry Wade, of Edinburgh. He had investigated 134 cases and found that 110 were sufferers from prostatic hypertrophy or chronic lobular prostatitis, 10 were fibrotic or chronic interstitial prostatitis, and 14 were carcinoma. In all of these he found great increase in the size of the gland affecting all lobes except the posterior. Advanced chronic lobular prostatitis presented ideal cases for suprapubic prostatectomy. Cases which were not ideal were those without hypertrophy, those without intravesical herniation, and those possessing incomplete false capsule formation. In prostatectomy the local changes resulting depended upon the nature of the disease present. The structures examined in fatal cases showed that the whole prostate tissue was practically never entirely removed by finger dissection. Fatal cases examined showed internal and external vesical sphincters undamaged, the thick false capsule containing prostatic tissue and the ejaculatory ducts and posterior lobe also undamaged. In most general hospitals the mortality of prostatectomy was still very high, 20 per cent. to 25 per cent. This was accounted for mainly by the advanced stage of the disease in which operation was undertaken. Suprapubic prostatectomy was suitable for advanced chronic lobular prostatitis of a certain type not easily recognisable clinically. For all other types the perineal operation of Young by open visual dissection was best, and probably some such procedure would in future be the operation of choice, as cases would come into the surgeon's hands much earlier than at present. Dr. T. K. Dalziel of Glasgow then read notes of a condition he had met with in 22 instances of neuralgia of the twelfth dorsal nerve simulating visceral lesions. These cases were characterized by obstinate persistent pain, neuralgic in character, existing mainly in the renal, the appendicular, the pubic regions, and sometimes over the crest of the ilium, the seat of distribution of the dorsal branch of the nerve. Some of the cases had had operations on the viscera performed with no success, and all of the cases but two made perfect recoveries after exposure, stretching, division, and sometimes avulson of the nerve. No special pathological changes were found except in a few which showed fibrosis and inflammatory changes. He attributed the lesion to the wandering course of the nerve, in which it was exposed to conditions of unrest and possibly trauma. Mr. Herbert J. Paterson brought before the Section very briefly the subject of the surgical treatment of intestinal stasis. He thought that 85 per cent. of the cases were relieved by removal of the appendix. Other cases were amenable to ileo-colostomy or partial colectomy. Mr. C. P. Childe showed an enormous retroperitoneal fibroma, weighing a little short of 35 lb., successfully removed. He believed the tumour originated from the capsule of kidney. In doing the operation the tumour was so large that it required two persons to hold it and manipulate it in its final removal from the abdominal cavity. Several members of the Section commended the operator's courage and optimism in attempting the removal of so huge a mass. On the proposal of Professor J. T. J. Morrison a vote of thanks to the President and officers of the Section was heartily passed.

Section of Tropical Medicine.

Thursday, July 24th.

The second day's work commenced with a discussion on dysentery, which was initiated by Captain S. R. Douglas. His paper included a general account of the life-history of the amoebae to which dysentery is due and of experimental work on the subject as recorded in recent literature, detailed allusion being made to the investigations of Schaudinn and the labours of Wenyon. A second paper came from Dr. Savage, who based his communication on a record of 287 cases of dysentery treated by him at Tor on the Red Sea. Etiologically they fell into three classes—bacillary, amoebic, and mixed. His experience led him to advocate strongly the serum treatment of bacillary dysentery. A third paper came from Dr. Wenyon, who dealt with the amoebae found habitually or occasionally in the intestinal canal; he pointed out the various difficulties that may arise in distinguishing various species thereof, and emphasized the desirability of endeavouring to limit the present state of confusion in this branch of parasitology by refraining for the present from naming alleged new varieties. Major Harrison, Major Houghton, Colonel Molesworth, Dr. Cameron Blair, Major Jackson, Dr. Leahey, and Dr. Malcolm Watson took part in the discussion. In the course of the morning the Section was very much beholden to Professor Wasielewski (Heidelberg) for an excellent demonstration on the cultural characteristics of *Amoeba limax*. The demonstration was illustrated by fine camera lucida drawings and some excellent microscope specimens.

Friday, July 25th.

Work on the concluding day was devoted to the subject of filariasis, and included an excellent demonstration by Dr. Bahr of various filarial conditions. The discussion itself was introduced by Dr. G. C. Low, who summarized and annotated work on the subject the results of which have been published during the past twelve months. In addition he gave a detailed description of the morphological characteristics of various forms of filaria which have been described. Professor Wasielewski, Dr. S. Watson, and Dr. Cameron Blair took part in the discussion. The last paper, which dealt with phlebotomus fever and dengue, was read by Colonel C. Birt, who described the distribution of sandfly fever and dealt with its clinical phenomena. He also provided a careful account of the various epidemiological and other features by which a differential diagnosis might be established between this fever, dengue, and yellow fever.

ROYAL MEDICAL BENEVOLENT FUND.

At the July meeting of the Committee 21 cases were considered, and grants amounting to £150 made to 16 of the applicants. Appended is an abstract of the cases relieved:

1. Widow, aged 55, of M.R.C.S., L.R.C.P. No income, and has recently undergone a severe internal operation. Voted £5.

2. Daughter, aged 57, of M.R.C.S., L.S.A. No income; slight help from relations; health too indifferent for regular occupation. Relieved seven times, £70. Voted £10.

3. Widow, aged 67, of M.R.C.S., L.R.C.P. Has a small pension from a city company and receives slight assistance from relations, but is obliged to ask for help because she has to support an invalid daughter who is quite unfit for any occupation. Voted £12.

4. M.R.C.S., L.R.C.P., aged 38. Incapacitated by phthisis, but is progressing under treatment and hopes to be soon able to work again; dependent, with his wife and two children, on relations who can ill afford to help. Voted £12.

5. Wife, aged 39, of M.R.C.S., L.R.C.P. Husband has been in bad health for some years past, and during the last three months has been unable to earn anything. No income; three children, aged 16 to 7; small savings practically exhausted. Relieved three times, £25. Voted £10.

6. Daughter, aged 68, of late M.R.C.S. Receives a home in return for her services but is given no salary; health indifferent. Relieved eleven times, £156. Voted £12.

7. Widow, aged 63, of M.B.Glasg. Lost her husband a few months ago after a long illness; only certain income £18 a year. Relieved once, £6. Voted £6.

8. Widow, aged 63, of M.D.St. Andrews. No income; precarious earnings by letting lodgings; children unable to help. Relieved nine times, £108. Voted £12.

9. Daughter, aged 59, of late M.D.Edin. Used to be a governess, but for some years past has been unable to obtain a post in that capacity, and now endeavours to support herself by needlework. Relieved eight times, £40. Voted £10.

10. Daughter, aged 63, of late M.R.C.S. No income; health too feeble to admit of self-support; slight help from friends. Relieved six times, £76. Voted £12.

11. Daughter, aged 32, of late M.D. Unable to earn a living on account of long-continued ill health, and dependent on her mother, whose only income is £40 a year. Relieved eight times, £60. Voted £10.

12. Daughter, aged 56, of late M.R.C.S. Gives her services in return for a home, but receives no salary, and, being in bad health, is obliged to incur unavoidable expenses. Relieved five times, £25. Voted £5.

13. Daughter, aged 63, of late F.R.C.S. Maintained herself as matron of an institution for many years, but is now in indifferent health; only income a small pension from another society. Relieved twice, £24. Voted £6.

14. Widow, aged 65, of L.R.C.P.Lond. Was left a widow many years ago with five young children, and has exhausted her means in bringing them up. Only income £30 a year from Epsom College. Relieved three times, £36. Voted £6.

15. Daughter, aged 57, of late L.R.C.P.Edin. Incapacitated for many years, and dependent on two sisters whose earnings are very small; has recently undergone a severe operation. Relieved nine times, £81. Voted £10.

16. Daughter, aged 43, of late M.D.Lond. No income, and help given by a friend for some time past unavoidably withdrawn. Relieved once, £5. Voted £12.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 11, Chandos Street, Cavendish Square, London, W.

IMPERIAL CANCER RESEARCH FUND.

The annual meeting of the Imperial Cancer Research Fund was held at the Examination Hall, Queen Square, Bloomsbury, on July 24th, the Duke of Bedford presiding. Among those present were Sir William Church, the Presidents of the two Royal Colleges, Lord Tavistock, Mrs. Bischoffsheim, Sir Douglas Powell, Sir John Tweedy, Sir Francis Lovell, Lady Meiklejohn, Dr. F. W. Andrewes, Professor Sims Woodhead, Sir Alfred Pearce Gould, and Dr. William Bulloch. Adeline Duchess of Bedford, Sir Thomas Glen-Coats, Lady Wernher, Lord Ashton of Hyde, Lord Inverclyde, Lord Shuttleworth. The Knight of Kerry, Mr. Waldorf Astor, Sir Henry Morris, Dr. T. T. Whipham, Lord Rothschild, Mr. A. J. Balfour, Lord Strathcona, Sir Charles Morrison-Bell, and others wrote expressing their regret at being unable to attend.

Report of the Honorary Treasurer.

The Honorary Treasurer, Sir W. Watson Cheyne, in his report for the year ending June 24th, 1913, said the year had proved to be satisfactory from a financial point of view, for not only had the general fund profited by a legacy from the late Mr. James Willcock, who in his lifetime gave a sum of £1,000, but the endowment fund had also been increased to the extent of £10,000 by the generosity of Mr. Edwin Tate. Two other legacies had been received, one of £500 from the executors of the late Mr. Stewart Dow, and one of £50 from the executors of the late Mr. Andrew MacMahon. Apart from the gift to the endowment fund, the total received during the year by legacies, donations, and subscriptions amounted to £6,610, which was the largest since 1908. The income from investments had amounted to £4,737 11s. 7d., so that but for legacies, donations, and subscriptions there would have been a deficit of £1,335 15s. on the ordinary working expenses. Thanks to the efforts of the President, the list of donations and subscriptions had materially increased this year.

Report of the General Superintendent and Director.

New Facts.

Dr. Bashford stated in his report that the new laboratories had been found sufficiently commodious and suitable in every way for the continuation of the investigations. The experimental matters dealt with were, for the most part, records of facts. Two new facts recorded in the report, which revolutionized prevailing conceptions, illustrated the need for patience. The first was that the power of some rare carcinomas to produce sarcoma was a transitory property which might be lost during prolonged propagation, and not a property acquired as the result of such propagation. The second was that the power of progressive growth and of dissemination, both of which might be acquired by propagated tumours previously liable to spontaneous cessation of growth and cure, was due to loss of power to induce resistance to their own growth. Both these observations appeared, at the present time, to have a fundamental bearing on the problems of malignant growth.

Statistics.

The statistical investigations had been continued in India, the Colonies, and Dependencies, with results which agreed with those already recorded.

Similar investigations had been conducted by the German Imperial Colonial Office. The report on the material thus forwarded from the German colonies to the German Cancer Committee, from Samoa, German East Africa and German South-West Africa, and the South Sea Islands, stated that carcinoma was by no means rare as is generally supposed. The relative frequency could not be determined, but

> it is certain that no new growth occurs in Germany which is not also found in the natives of the tropics and no new growth occurs in the tropics which is not found in Germany. . . . The apparent rarity of malignant new growths is to be explained by the fact that the natives with such tumours do not go to the hospitals, but avoid them and die unknown, and this is particularly the case for internal tumours.

This agreement in the results obtained independently through the investigations of the German Imperial Colonial Office and the Foreign, India, and Colonial Offices of this country should go far to dissipate any lingering belief that European habits of life were primarily responsible for the occurrence of cancer. Another aspect of the statistical investigations to which great prominence had been given in the reports issued by the Imperial Cancer Research Fund, had attracted increased attention abroad during the past year—namely, the relation obtaining between peculiar customs and cancer of certain parts of the body. These native customs were really unintentional experiments which altered the site-incidence or anatomical distribution of cancer in the body as known in Europeans.

Cancer Houses and Districts.

During the past year there had been more than the usual number of requests for information as to the existence of "cancer houses," or of districts in which cancer was frequent beyond the average, and as to whether or not the increase in the number of deaths recorded from cancer in this or that area was to be regarded as disquieting or not. The question was almost entirely a statistical one, and the governing factor in all cases which had been investigated had proved to be the varying age constitutions and sex constitutions of the populations in each case.

Whereas at the 1901 census, out of 1,000,000 males of all ages, 311,354 were over 35 years of age, this number had risen to 339,348 at the census of 1911. Similarly in 1901, out of 1,000,000 females of all ages, 325,136 were over 35 years of age, while in 1911 the corresponding age groups accounted for 355,744 of every million females living. This incongruity of the age constitutions of the population at the 1901 and the 1911 censuses had led to an overestimation of the cancer death-rate in the later years of the intercensal period, in the following manner: The population on which the death-rates from cancer, as from other diseases, was calculated was obtained by assuming that the relative numbers at each age group had maintained the same proportion to each other and to the total population as at the last available census. Hence the cancer death-rates, in 1910 for example, were calculated as occurring in a population with fewer individuals in the age groups over 35 years than must actually have been the case in the light of the census of the ensuing year. The cancer rate was, in consequence, inflated by being reckoned on male and female populations with too few members in the age groups which contributed the majority of the deaths from the disease. Analogous considerations served to minimize the importance of differences in the death-rates from cancer in restricted areas (for instance, counties), in any year or series of years. The proportions of the two sexes and of the several age groups for each sex varied from one locality to another. The mortality from all causes varied greatly at different ages and in the case of cancer also for sex, the female sex being more liable. Thus, while the death-rate from cancer per million living in England and Wales in 1910 was 856 for males and 1,070 for females, these average rates were exceeded in some counties and not attained in others, as appeared from the adjoining table:

Deaths per Million Living, 1910.

	Males.	Females.
England and Wales ...	856	1,070
Huntingdonshire	1,267	1,644
Lancashire	801	976

Proportion over 35 in 100,000 of all Ages.

	Males.	Females.
England and Wales ...	33,935	35,574
Huntingdonshire	38,498	41,046
Lancashire ...	33,053	34,522

The columns of the second table showed a considerable deviation in these counties of the proportion of individuals over 35 years of age from that obtaining in the general population, and in both cases in the direction which would lead to the differences in death-rate actually recorded; that was to say, a smaller proportion in Lancashire and a larger proportion in Huntingdonshire. In the case of the latter

county, moreover, the fallacy which lurked in small numbers might also play a part, the high death-rates in the table being obtained by multiplying the 70 deaths which occurred in 1910 by the factors required to raise the population to 1,000,000 of each sex. That this was so was shown by the accompanying table of the small and irregularly varying number of deaths recorded from cancer in Huntingdonshire for the last ten years.

Cancer Deaths in Huntingdon.

	Males.	Females.	Total.
1901	22	31	53
1902	32	27	59
1903	22	43	65
1904	37	28	65
1905	31	35	66
1906	37	30	67
1907	28	21	49
1908	25	35	59
1909	24	26	50
1910	30	40	70

A similar explanation was found to hold for an alleged "cancer-street" which was stated to exist in a town in Scotland.

Notification of Cancer.

Referring to the discussion by various public bodies and medical officers of health of the advisability of making cancer a notifiable disease, Dr. Bashford said that attempts at notification had already been made in the "cancer censuses," which had been criticized adversely in previous reports. The insidious onset and long duration of cancer, which had rendered a "cancer census" nugatory, were equally destructive of the utility of cancer notification, as might appear from the following considerations. Notification was an essential feature of the "cancer census." A review of the poor result attained from notification in other countries might be a public duty at the present time.

It seemed very advantageous to have, say, 12,000 cases of cancer all notified on one day, especially if the notification coincided with a census of population, as was actually the case in Germany on October 15th, 1900; but reflection showed that even these primary data—numerous though they were—were valueless. The results set out below show that cancer, unlike acutely developing infective diseases, was incapable of approximately complete notification. Cancer was a disease of insidious onset, lasting two or three years and in some instances even much longer. Therefore, at least two or three times as many persons were suffering from it on any one day as appeared in the yearly death returns, and this fact should find expression in the figures were there any approach to complete notification. But there were twenty-five times as many deaths as there were cases notified in the Spanish census, and in Germany there were three times as many. A slight excess of the cases notified over the deaths was obtained only for Baden, where the notification, however, proceeded for a whole year. The actual figures were:

	Deaths in a Year.	Patients in Census.
Germany	40,000 (*circa*)	12,000
Holland	4,786	1,460
Spain	7,294	298
Portugal	1,320	1,184
Baden	2,125	2,675
Hungary	11,810	3,570
Sweden*	?	1,872
Denmark*	?	1,135

* Statistics only available for towns.

It must be obvious that such imperfect figures cannot be made the basis of statistics.

The imperfections of notification may be brought out in another way. In Spain only 3 per cent. of the doctors circularized replied, and half of these returned "negative" answers. By negative was meant that no case of cancer was under observation. The percentage of answers was 55 for Germany, 45 and 61 respectively in the two censuses made for Baden, 97 for Sweden, and 99 for Denmark and Hungary. In the case of Sweden half of the answers were negative, in Denmark more than half, and in Hungary, where the notification was compulsory under penalty, three-quarters of the doctors reported that they had no case under observation. The actual figures were as follows:

	Doctors Circularized.	Doctors Answering.	Percentage of Negative Replies.
Germany	25,376	14,060	50
Holland	1,455	875	—
Spain	20,000	592	49
Portugal	1,793	1,307	—
Baden	—	61%	20
Do.	—	45%	
Sweden	1,331	1,295	50
Denmark	1,524	1,513	59
Hungary	—	—	75

The large proportion of doctors reporting they had no case under observation might be due to a variety of factors. Negative reports could not of themselves be taken as evidence that cancer was in reality non-existent at the time, but only that it was not noted, either because of imperfect observation or a too early stage of the disease, or because the simplest way to avoid the penalty for making no return at all was to return the form with a negative answer. It was obvious that compulsory notification had not and could not secure complete records of all cases of cancer owing to the insidious onset of the disease and the difficulties of diagnosis even in fairly advanced cases. Regarding the propriety of compulsory medical certification of causes of death there could be no difference of opinion.

In another particular the original method of the cancer census had been modified so as to resemble mortality statistics. The idea as originally put into practice in the census taken in Germany on October 15th, 1900, was a true census on a single day; this had been followed in Holland, Spain, Hungary, and Denmark, but the time had been extended in Sweden to three months, and in Baden to a whole year. The needless overlapping of this kind of investigation with yearly mortality statistics appeared to have been fully established with the extension of the period of observation to a year. The futility of the undertaking was demonstrated by the fact that the number of cases of illness reported, instead of being treble or double, only slightly exceeded the deaths recorded for a year. Notification, be it made on a day, or throughout three months, or even a year, only gives a rough approximation, unlikely to give continuously accurate results. It became evident that to follow the recorded deaths from year to year over a prolonged period was not only a more accurate but a more practical statistical method. Moreover, in addition it must be borne in mind that grave statistical fallacies had crept into the tabulation of the figures of "cancer censuses," especially with regard to corrections for the age and the sex of the populations. Separation of the statistics of cancer from those of the general mortality had not beneficially affected the results obtained.

In Germany the cancer census had not been repeated either in connexion with the census of population in 1905 or in 1910. Professor Kirchner took a prominent share in advocating it and in describing the results of the data collected on October 15th, 1900. He was now the distinguished head of the Medical Department of the Ministry of the Interior in Berlin, and he had recently stated that the consideration of the repetition of a cancer census had been postponed again and again as being of little practical value. He strongly advised that a census on a single day should not be repeated. As an alternative he suggested that the medical profession should be called upon to fill up a form so soon as a case of cancer came under observation and carry it on up to the death of the patient. Since this proposal involved much trouble, it hardly promised to be as successful as the single-day census, and therefore the utility of notification of cancer for statistical purposes might be dismissed as a method not likely to be so valuable in this country as the present system of statistics based upon the certification of causes of death.

While the difficulty arising from the obscurity of the early diagnosis of cancer might be overcome in the future by the discovery of new methods, the consequences of the long duration of illness from cancer would entail the necessity of an elaborate administration to discover and correct multiple notification of single cases, a task which would probably exceed that involved in the correction of death-rates for deaths in institutions and hospitals remote from the home of the deceased, as now carried out at the instance of the Local Government Board and the General Registrar's Office. When it was remembered that there was no unanimity as to the action which should follow notification, it did not seem justifiable to embark on such an extensive administrative scheme in the present state of knowledge.

Claims to "Cure."

During the past year there had been twelve claims of the possession of a cure for cancer. Where any tangible basis for these claims was put forward they were inquired into as in previous years. No justification for any one of these claims was obtained.

EXPERIMENTAL INVESTIGATION.

Heredity.

The heredity studies, of which an account was published in the Fourth Scientific Report, had been continued and extended. More than 200 additional animals were available for enumeration on October 24th, 1912, the total being 800.

The general result agreed with that already published, the incidence of spontaneous cancer of the mamma in mice of recent cancerous ancestry being nearly double that in mice of remote cancerous ancestry. The greater liability of mice of recent cancerous ancestry was still more evident if cancer of other organs be considered as well. It was then found that 98 in 476—that is, more than 1 in 5—of all female mice of recent cancerous ancestry which attained the age of 6 months ultimately died of cancer. Of the female mice of remote cancerous ancestry which lived for 6 months, 324 in number, 39 ultimately died of cancer of the mamma or other organs—that was, rather more than 1 in 9.

It was still impossible to make a definite statement of the nature or exact mode of transmission of the predis-

position revealed by these investigations. The rest of the report dealt with the constancy and variability of tumour cells; constancy and variability in histological structure; constancy and variability of more subtle properties; sarcoma development; constancy and variability in "immunity" reactions producing hindrances to growth; acquisition of progressive growth and dissemination by transplanted tumours; and bio-chemical investigations. The main features of the investigations on these subjects were summarized by Sir William Church, President of the Executive Committee.

ADDRESS BY SIR WILLIAM CHURCH.

Sir WILLIAM CHURCH, in presenting the annual report, said the observation and study of the constancy and variability of the cells and histological structure in propagated cancer tumours, together with researches into the acquisition and loss of immunity under certain circumstances, had been the principal work of the scientific staff during the year. In the old laboratories as many as 86 spontaneous mouse tumours were kept under propagation for the purpose of studying their constancy and variability, and the results were given in the Fourth and Fifth Scientific Reports. Consequently it was considered unnecessary to transport 59 of them to the present laboratories. Twenty-seven were retained on account of the fresh light they appeared to throw not only on the constancy and variability of the tumour cell and the histological structure of the tumour, but also on the variations they presented in their power of conferring immunity. The constancy with which histological structure was maintained was shown by tumour "27," which after seven years' propagation in two slightly different strains still retained the structure of the original tumour—namely, a papilliferous adenoma. The same constancy of type was shown by tumours "72" and "155," which had been respectively propagated for seven and five years. On the other hand, tumour "91," originally and in its early transplantations acinous and gland-like, now presented a solid or alveolar structure whether the growths were young or old. Tumour "37," propagated in as many as seventeen strains on account of the great variety of form they presented, had yielded seven strains which maintained with singular constancy their individual differences, the strains being (*a*) alveolar carcinoma, (*b*) three strains of adeno-carcinoma, (*c*) carcinoma with spindle cells, (*d*) polymorphous-celled sarcoma, (*e*) spindle-celled sarcoma. Eight tumours (486, 630, 349, 386, 466, 297, 239, and 292), which presented a tendency to keratinization as their distinguishing differentiation, had been continuously propagated; 486 and 630 still produced squamous epithelium after two and three years' propagation; 466 showed a combination of keratinization with the formation of sebaceous material which had continued to characterize it during three years and 27 transplantations; 349 and 386 had completely lost the power of differentiation into squamous epithelium, and were now quite free from keratin. Tumours 466 and 297 showed sebaceous differentiation, and 297 had maintained this character in full activity for four years during 29 transplantations. Another tumour, 239, whilst showing sebaceous differentiation for 30 transplantations, appeared now to be losing that character. From tumour 292, which showed sebaceous material and keratin, two distinct strains were obtained. In strain "A" the keratin continued for seven transplantations and then disappeared, to reappear again in diminished amount from the 19th to the 25th transplantations. In the 40th transplantation it was found that the contents of the vacuoles were not sebaceous material but glycogen. The other strain, "B," showed both sebaceous material and keratin in small amount for the first 20 transplantations; they then disappeared and have not as yet returned. The formation of glycogen by tumour cells varied in a similar manner. Tumour "113" had continued to show relatively enormous quantities of glycogen although it had been continuously propagated for five and a half years, whilst tumour "830," originally containing glycogen in considerable amount, had gradually lost the power of forming this substance. The formation of keratin, glycogen, and fat in the above-mentioned tumours showed that in the investigation of cancer other subjects than the morphology of new growth must be considered. On what did the powers of producing these substances depend? Again, what accounted for the different properties appearing to exist in certain tumours, hindering the development of new growths in some cases and in others producing sarcoma in the connective tissue of normal mice? It was obvious that these effects must depend, not on histological structure of the tumour, but on some hitherto unrecognized property which some appeared to possess continuously, while in others it was lost after a shorter or longer interval. The development of sarcoma subsequent on the transplantation of carcinoma had been described in previous reports in connexion with tumours "37" and "100"; and in the Fourth Scientific Report, the apparent loss of this power was recorded for tumour "37." Subsequent investigations continued for more than two years showed that this power had been lost in five substrains derived from tumour "37." Tumour "100" caused the development of sarcoma in every animal from the twelfth to the twenty-fifth transplantation, if the transplanted tumour were allowed to grow for about two months, but produced pure carcinoma only if transplanted after growing for a month or less. Four of these carcinomatous substrains had been kept growing, and presented variations from this behaviour. In the first substrain (*a*) the variation was in the earlier appearance of sarcoma. This early appearance of sarcoma and the rapidity of its growth rendered it impossible to retain the carcinoma in propagation after the twentieth subtransplantation. In the second substrain (*b*) sarcoma did not manifest itself unless the transplanted tumour had been growing for 100 or more days, and in (*b*) tumours 200 days old had, when transplanted, remained pure carcinoma, the power of producing sarcoma being lost. Strains (*c*) and (*d*) began to cause sarcoma when about sixty or seventy days old, and had continued to do so until the fifty-third transplantation, but now appeared to be losing this power. This power to induce sarcoma development was characteristic of a small minority of transplantable tumours; when it occurred it was almost certainly a characteristic of the primary spontaneous tumour, and this sarcoma development had been observed when a transplantation had been made from a spontaneous tumour into the same mouse in which the primary tumour was found. The nature of this power in some carcinomas was still obscure. Cell-free filtrations were prepared from carcinomatous tumours, and mixed carcinoma and sarcoma was dried *in vacuo* with every care; but inoculation with these produced no results. It had been found that tumours apparently sarcomatous in character, occurring in the rabbit and guinea-pig, could be successfully propagated only in their own species, and were incapable of immunizing other kinds of animals against the inoculation of tumours. Further evidence had been obtained that the resistance to growth induced by the inoculation of normal or of tumour tissue was identical in nature. In both the maximum resistance was reached in about ten days, and was gradually lost, normal susceptibility to inoculation being regained in eighty days. Attention was first called in 1906 to the part played by the simultaneous absorption of tumour tissue in hindering its own growth. After six or seven years of the observation and study of eighty-six strains of distinct primary origin, it became possible to divide these strains into groups each having specific types of growth, and to select from them strains exhibiting the characteristic features of the group in the highest degree. The differences in these groups appeared to depend on differences in the original tumours, and not on the soil in which they had been grown, use having been made in all cases of normal mice. Thus tumour strain "206" after five years of transplantation still took and grew rapidly in every case, but all the tumours cured themselves and eventually disappeared; while on the other hand, strain "47" after seven years' propagation grew slowly in a small proportion of the mice experimented on, and the tumours disappeared in the majority, but not in all. Strain "199" grew rapidly in more than one-half of the inoculations, but a high proportion of the tumours disappeared. Tumour strains "63" and "50" which formerly behaved in a somewhat similar manner, now grew in every animal inoculated, and did not disappear. Fresh experiments on the peculiar characters of individual tumours appeared to throw some light on this complex subject. If spontaneous tumours of distinct

histological features, taken from two separate animals A and B, were intimately mixed together and inoculated into A and B, that obtained from A took in A and that from B in B, whilst B disappeared in A and A in B, the probable explanation being that the absorption of A conferred powers of resistance to the growth of A in B, but did not confer any such immunity against the growth of the tumour which B originally had. Propagated tumours which only exhibited transitory growth when inoculated into normal animals presented exactly the same features as did normal tissue cells; both agreed in producing resistance to the growth of grafts of themselves inoculated subsequently, whilst normal or tumour tissue taken from another animal when inoculated produced resistance both to its own growth and to the development of grafted tumour tissue. Experiments had shown that some strains of propagated tumours grew progressively, whilst other strains had a tendency to disappear, and it was found that inoculation with tumour tissue from strains in which the growth was progressive conferred less powers of resistance to subsequent inoculation with other tumour tissue than did inoculation with tumour tissue taken from strains of propagated tumours which had a tendency to disappear. The power of inducing resistance to the development of tumour tissue therefore appeared to be due to some property inherent in the tumour itself and not dependent on other causes. The equipment of the new laboratories for chemical and bio-chemical research received very careful attention. A considerable amount of work bearing on carbohydrate metabolism and the glycogenic properties of cancer cells had already been done, but was not sufficiently advanced for publication. He proposed that the report should be adopted.

In seconding the adoption of the report, Sir Alfred Pearce Gould said the extremely careful, elaborate, and numerous investigations had been very important, and they had certainly been very successful in throwing a good deal of light upon the still dark problem of the nature of cancer. The strongest feeling he had in reading the report was the proof it gave of the value of continuous work such as had been carried on by the Fund for eleven years. Possibly when the scheme was founded, some people might have thought that a few years would find the problem solved, but as the work had progressed further, unknown fields had rendered themselves evident. They could not, therefore, look for any speedy conclusion of the work, nor for any limitation of the area over which investigations would extend. He thought it was evident that there were fields of research beyond those which had been explored hitherto which were likely to throw considerable light on this problem. Another fact brought out by the report was the value of the bulk of the work. Had Dr. Bashford and his fellow-workers been content with a limited number of tumours or experiments, they would not have been in anything like so good a position as they were now in the knowledge of cancer. No one could doubt for one moment that the work done had brought very materially nearer the day when that blessed word "cure for cancer" might be used.

The report was adopted.

Sir John Tweedy moved a vote of thanks to the Chairman and members of the Executive Committee, the Subcommittees, the Honorary Treasurer, and others who had assisted in the work of the Fund during the past year. The whole of the report testified to the ability, the skill, and the knowledge which the members of the Committee brought to bear upon their work.

Mrs. Bischoffsheim seconded, and the vote was unanimously passed.

Elections.

Sir Rickman Godlee proposed that Mr. Edwin Tate be appointed a vice-president of the Fund. He said Mr. Tate belonged to a family who had wisely exerted themselves in benefiting the cause of education, and now he had shown his wisdom in making the Fund a munificent donation and earmarking it so that it might be placed to the endowment fund, which had now reached the sum of £56,000.

Sir Watson Cheyne, in seconding, said the Fund this year had encroached on capital funds because of the expense of moving into that building and fitting up the laboratories, but he was glad to say that they had not had to sell out investments to pay current expenses. It was to gifts such as that of Mr. Tate that they owed that happy result.

The resolution was unanimously adopted.

On the proposition of Sir Douglas Powell, seconded by Dr. John Tatham, Mr. Edmund Owen was elected a member of the General Committee.

Vote of Thanks to the Duke of Bedford.

Sir Thomas Barlow, in moving a vote of thanks to the Duke of Bedford, said they owed much to His Grace for the unremitting and enlightened help which he gave to that great undertaking. The support which the Duke had so consistently rendered was a very great help to all right-minded people in maintaining the position of the Fund.

Sir Watson Cheyne, in seconding, said they had special reason to thank the Duke of Bedford this year, because by his personal efforts he had achieved a marked success in increasing the income of the Fund and the number of the subscribers.

The vote was unanimously accorded.

The Duke of Bedford, in reply, said that although the present moment was not a good one for getting money for such a purpose as that of scientific research, his appeal had had a certain measure of success, resulting in sixteen additional annual subscriptions amounting to £184 and donations amounting to £455 (cheers). The immense difficulty and the very wide range of the investigation must reconcile them to the fact that no curative results could yet be reported, but if they considered the enthusiasm and singleness of purpose with which the inquiry was being conducted, they had every reason to be hopeful of the future.

The research was no longer imperial; it had become an international research. In this international effort to solve the problem the investigators whose services the Fund had secured had taken a leading part. He trusted that they would retain that position, but if they were to do so, the general superintendent and his colleagues must continue to have at their disposal the most complete equipment and the most capable brains that could possibly be obtained. They must, in other words, aid the conquest of a terrible disease by finding the necessary money.

ONE HUNDRED YEARS AGO.

Accidents in August, 1813.

Accidents are constantly happening. There is surely something paradoxical about this statement; for is not an accident a casualty, a contingency, an altogether exceptional and unforeseen event or occurrence? That is quite true; there is a paradox in the assertion that accidents or exceptional things are constant in incidence. Yet our insurance companies are able to draw up their tables pretty accurately, and to forecast with wonderful exactitude how many accidents there will be in any year, almost in any month of any year, say in this month (August) of 1913. So the paradox is a verbal one only; for there are laws which govern the exceptional occurrences as well as the apparently normal ones; there is a sort of fatality about fortuitousness. The individual suffers from an accident—it is truly an accident to him; but his exceptional experience goes along with thousands of others to make constant the great law that man is born to trouble as the sparks fly upward;[1] and even if the second clause of Eliphaz's generalization be joined, as some modern commentators think it should be, to the next verse,[2] and read with it, the truth stands sure that suffering is a law of life, and that much of it comes by accident. But the purpose of this article is not to be philosophic, dialectic, or didactic, but to throw a sidelight on the accidents our forefathers experienced a hundred years ago, in August, 1813.

In a quite curious and unexpected way a list, obviously imperfect and incomplete, of the accidents of August, 1813, is provided. It is in a modest periodical called *The Cheap Magazine*, or *Poor Man's Fireside Companion*, which began to appear in Haddington in January, 1813, "printed and published" there by "George Miller and Son."

[1] Bible, Job v. 7.
[2] *Expository Times*, vol. xxiv, p. 476, July, 1913.

Probably, almost certainly, Jane Welsh,[3] then nearly 12 years old, "learning Latin like a boy," knew the little magazine well, and enjoyed or at least tolerated its rather goody-goody stories and sententious reflections; doubtless she referred to its simplicity and quite irreproachable morals when discussing literature, as she came to do, with Thomas Carlyle in years to come. At any rate the editor, who was probably George Miller himself, in order to enforce certain lessons which he desired to see implanted firmly in his readers' minds, thought good to construct a "Chronological Table of Remarkable Events, illustrative of the nature of this work, extracted from periodical sources of information in the course of the year" (1813). These events prove, on scrutiny, to be mainly of the nature of accidents; and so there is given to the present-day reader a record, reliable enough if meagre, of the casualties of August a hundred years ago.

The first circumstance which arrests attention is that August seems to have been by far the most fatal month in the year; at any rate, the editor has been more successful in collecting casualties for this month than for any other. It was, as it is now, the holiday season, and that may account for the greater number; for when people are set loose from their ordinary employments, rendered to some extent idle, tempted to go bathing and shooting and the like, accidents will happen. We have not been able to come across returns of the accidents which happen in the United Kingdom tabulated according to their monthly incidence, but for some kinds of casualties, at any rate, we are prepared to hear that they occur most often in August.

Before we consider in some detail the accidents which our ancestors suffered from in August, 1813, let us look at two which happened in the earlier part of that year; one of them must be a rare occurrence now, but the other is a hardy annual in the garden of mischances. The former is thus told: "On Tuesday evening last, as a young woman was travelling on the outside of the Arundel stage-coach, she dropped asleep on the roof, and fell from it, when one of the wheels passed over her, and unhappily killed her on the spot." Death is still met in travelling, and railway-carriage doors fly open, taxis run down children, and motor cycles carry their owners into stone walls, but maids do not often fall asleep on, and fall from, the top of stage coaches. The other accident was as follows: "Lord Loughborough, a youth, only son of the Earl of Rosslyn, amusing himself last week by sliding down the balustrades of the stairs at a house in Canterbury, pitched on his head, and was taken up apparently lifeless." One may well write *semper eadem* opposite this sad occurrence; it would seem that so long as there are balustrades boys will try equitation upon them, with disastrous results. But why does the *Cheap Magazine* say "apparently lifeless," and leave us in doubt as to the ultimate issue of the mishap?

The accidents in August a hundred years ago may be grouped as follows: 6 were due to falls from various places (tree, window, scaffolding, etc.), 2 were due to horses, 2 to vehicles, 2 were in collieries, 1 was by drowning, 1 by firearms, 1 was caused by intoxication, 1 by passion, and 1 was in connexion with digging operations. Of the 2 colliery accidents, 1 was from fire damp, whereby at Collingwood colliery, near North Shields, 8 men were killed and 2 severely burnt; the other was at Bradley, Staffordshire, and consisted in the undermined works falling in and completely burying 7 men and 3 boys. It is evident, therefore, that such accidents were not uncommon a century ago, and yet it was not till 1860 that an Act for the regulation and inspection of coal mines was passed, and not till two years later (1862) that duplicate shafts were made compulsory. So long is it before the machinery of the law gets to work to protect the lieges from avoidable injuries.

For children then, as now, a vehicle had a fatal fascination. The *Cheap Magazine* has preserved two illustrations for us. Here is one: "On Sunday se'enight as some children were at play about a chaise standing in Shakespeare Square, Dumfries, one of them unluckily removed a stone which was fixed behind one of the wheels, when the vehicle was hurried down the declivity, and passing over a boy, broke his arm and thigh in a shocking manner." This is the other: "On Thursday, in Ponton Street, Fountain-bridge (Edinburgh), the tram of a cart upon which some children were swinging, fell upon the head of a fine young boy, and instantly crushed him to death."

The horse, too, was a danger as well as the cart. In the following incident "that intelligent animal" seems to have returned evil for good: "Last week, in the parish of Methluck, a man driving a cart heavily loaded with wood, when at the top of a rising ground, unyoked the horse for the purpose of allowing him some rest, when the animal seized the driver with his teeth, and nearly laid open one side of his head, by which the unfortunate man was thrown to the ground, and immediately trampled to death." The extreme condensation to which the facts in the foregoing occurrence have been subjected introduces some ambiguity into the narrative, but it does seem as if the horse was ungrateful for the rest given to him. Another incident which the editor has preserved for us is also connected with a chaise and a horse, although in this instance the victim had only himself to blame: "Lately, in a post chaise, Capt. O'Bryne, his death was occasioned by the bursting of a blood vessel in excess of rage with a postilion who offended him by slow driving." The captain was choleric, we fear, but post haste was not always speedy travelling, and doubtless the postboy was irritating to an angry and impatient man. Further, as Thackeray said, "what postilion can outride that pale horseman?" The captain knew not who was following him so hard.

In the examples which have been cited there seems to have been no medical aid at hand; at least, if there was, it does not seem to have been successful. In the following cases, however, the advent of the doctor is noted: "On Saturday (near the end of August), while two of the labourers were employed in levelling the ground of the new dépôt, Greenlaw, a large bank of earth which had been undermined gave way and nearly buried them alive. They were dug out and carried to Pennycuik for medical assistance, but one of them died before it could be procured." On the previous day this other accident happened: "On Friday last, while a servant girl was cleaning one of the windows in Dunlop House,[4] parish of Dunlop, Ayrshire, she unfortunately let go her hold and fell to the ground, by which she was so shockingly bruised that though medical aid was brought with the utmost promptitude she died that evening." In these cases medical aid, even when "brought with the utmost promptitude," was of no avail; but in the two now to be referred to it was more successful. "Tuesday morning, about 9 o'clock, a young man, a caulker, at work on the side of a ship at Rotherhithe, by some accident fell from the machine into the stream and immediately sunk. He was dragged for, and after lying in the water about fifteen minutes was taken up and conveyed to a house on shore in apparently a lifeless state. After the means for the recovery of suspended animation had been used a very short time symptoms of life were visible, and in less than an hour he was so far recovered as to be able to speak, and is in a fair way of doing well." The following incident is still more encouraging, and has the additional interest of introducing us to the medical student of a hundred years ago. "Lately, a boy, while bathing in the vicinity of Dingwall, had nearly lost his life by venturing beyond his depth. The body remained in the water for nearly ten minutes before it could be found, yet by the application of those means resorted to for exciting suspended animation, he was fortunately restored to life. Much praise is due to Mr. Fraser, student of medicine, and son of the Rev. Alexander Fraser of Inverness, who happened to be on the spot, through whose humanity and perseverance this was happily effected." This is capital; may we all, students and practitioners, ever show "humanity and perseverance."

In trying to reconstruct the scene and procedure of these recoveries from drowning of 1813, we must, of course, be careful to avoid anachronism. We think, perhaps, of the employment of Marshall Hall's postural plan of restoring the apparently drowned, and of Silvester's "true physiological method"; but these beneficent means were

[3] At any rate, some nine years later (in 1822), Jane Welsh was asked to assist in the starting of another Haddington periodical (*The East Lothian Magazine*), as she amusingly tells (*Early Letters*, pp. 44–54).

[4] This would be the old house; the fine modern Tudor mansion now known as Dunlop House was not built till 1838.

not forthcoming till 1856 and 1858. Marshall Hall, however, had begun his long and fruitful career of scientific investigation. He had graduated M.D. in Edinburgh University in June, 1812, and had then been appointed resident house-physician in the Royal Infirmary there. In this very year (1813) he gave a course of lectures on *Diagnosis*, the germ, no doubt, of his well-known work on that subject published some four years later. About this work on *Diagnosis* the following story is told: Dr. Baillie, the President of the Royal College of Physicians, was much struck with its power and lucidity, and, when one day the author called upon him, congratulated him upon the achievement of his *father!* He was unable to believe that so young a man (he was 27 at the time) could have written so deep and learned a book. But in 1813 all this, and Marshall Hall's method of treating the drowned, were still in the future; although we can well believe that the records of the drowning accidents which were constantly occurring at this time were making repeated appeals to the mind and sympathy of the young medical man and that the summation of stimuli thus received was effectual in spurring him to action in the years to come. It need hardly be added that Sir Edward Schäfer's admirable method of artificial respiration was far in the future.

How, then, it may be asked, were apparently drowned persons treated in 1813? What measures, for instance, did Mr. Fraser, the son of the Inverness minister, probably employ to save the life of the boy who ventured out of his depth at Dingwall in the month of August which we are writing about? An answer to this question can be got from the pages of Dr. William Buchan's *Domestic Medicine*; and from the nineteenth edition of that popular manual (published in London in 1805) the following information is taken. After a cheering introductory remark to the effect that we must not too soon despair of restoring one who has been even for fifteen minutes in the water, Dr. Buchan proceeds to details. The body is, of course, to be taken out of the water and conveyed to a place convenient for the performance of the necessary operations. Then, according to the views of the time, persistent efforts are to be made to restore warmth, for this is the guiding principle evidently which was relied upon. Dr. Buchan writes:

> In attempting to recover persons apparently drowned, the principal intention to be pursued is to *restore the natural warmth*, upon which all the vital functions depend, and to excite these functions by the application of stimulants, not only to the skin, but likewise to the lungs, intestines, etc. Though cold was by no means the cause of the person's death, yet it will prove an effectual obstacle to his recovery. For this reason, after stripping him of his wet clothes, his body must be strongly rubbed for a considerable time with coarse linen cloths, as warm as they can be made, and, as soon as a well-heated bed can be got ready, he may be laid in it, and the rubbing should be continued. Warm cloths ought likewise to be frequently applied to the stomach and bowels, and hot bricks or bottles of warm water to the soles of the feet and to the palms of the hands.

Volatile spirits are to be applied to the nose, brandy is to be rubbed on the pit of the stomach and over the spine, and tobacco and marjoram powders are to be projected up the nostrils. A strong person must blow air into the drowned man's mouth with force, or he may use Dr. Munro's wooden pipe and send the air into one of the nostrils, keeping the other one closed. "When air cannot be forced into the chest by mouth or nose, it may be necessary to make an opening into the windpipe," but this requires the services of a surgeon. The fume of tobacco is to be thrown into the intestines in the form of a clyster, and Dr. Buchan describes a rough and ready method for doing this by means of a common tobacco pipe; but if this be impossible, then clysters of warm water with some salt or spirits added should be given with a clyster-bag and pipe. The patient should be put as soon as possible in a hot bath, or, if that be not procurable, in warm sand, ashes, or grain. No liquors should be poured down his throat until he has shown some signs of life, and then wine or cordial may be administered. Some recommend a vomit after he is a little reanimated; but if he can be made "to puke without the sickening draught" it will be more safe. Finally, says Dr. Buchan, "we are by no means to discontinue our assistance as soon as the patient discover some token of life, since they sometimes expire after these first appearances of recovering."

With such limited means at their disposal one feels all the more sympathy with our medical forefathers in their efforts to restore the apparently drowned, and we may admire with full freedom the "humanity and perseverance" which they so often showed in face of heavy odds.

When we compare the accidents of a hundred years ago with those which are happening to-day we can hardly avoid some pessimistic feelings. Against a few mishaps which have, so to say, become obsolete, such as falling off stage coaches, we have to place all those new ways of suffering injury and running to meet death which our boasted advances in locomotion, in manufacture, and in amusement have brought to us. We go down to the floor of the Atlantic by hundreds in "unsinkable ships"; we are crushed under cars which it is "impossible to imagine turning turtle"; we fall to the earth with, from, or by aeroplanes; we give ourselves epitheliomas by the *x* rays; we have made a new disease by setting men to work in caissons; and we have possibly put a premium on malingering by our Insurance Acts and on accidents by our employers' liability measures.

One is tempted to ask, What profit is there? Whilst we have diminished our death-rate by keeping the old longer alive, have we actually multiplied the means by which the young can and do accidentally meet mortality? Is modern progress but the advance of a Juggernaut car? No, we do not admit it. We think, instead, of our hospitals, big and little; of the ambulance wagons which in many towns are speedy, steady, smooth-moving, and to be got at once by telephone; of first-aid lectures and practice; of our fire-extinguishing arrangements with the bravest of men to work them; of Pasteur's discovery, which takes the fear out of hydrophobia from bites; of legislative precautions in mines, in factories, in caissons, in ships, as regards motors and trains, and, ere long, if not yet, for aeroplanes and dirigibles; of many other things which make us feel once more that man is mastering matter by degrees, and is waging a great, a long, a hard, but not by any means a losing, battle against accidents and chance. *Pugnam sperate parati:* Being ready, hope ye for the battle; let us "grasp the skirts of happy chance, and breast the blows of circumstance, and grapple with our evil star."[5]

EPSOM COLLEGE.

Founder's Day was celebrated at Epsom College on July 26th, when a large number of visitors were present. The proceedings began with a service in the College Chapel at 2.45 p.m.

Before the distribution of the prizes in the big schoolroom the head master reviewed the work of the school during the year, and briefly referred to the honours which had been gained by present and past Epsomians since last Founder's Day. He announced that an aeronautical section had been established at the College, and expressed the opinion that no other school in the country had taken up that subject.

The prizes having been distributed, Sir Henry Morris delivered an address to the boys, in the course of which he said that it was fifty years ago and more since he sat there to see some of his fellow students come up to receive their prizes, but he could recall as but of yesterday the pleasures and disappointments of these occasions. The successes of the successful were, of course, well deserved; but he would like to remind them that their success that day was but getting one foot upon a rung of the ladder of success; and that the rung of a ladder was never meant to rest upon, but only to serve as a *point d'appui* whilst the other foot was being raised somewhat higher. He asked them not to dwell too long in the self-complacent contemplation of their successes, but to look forward to the next difficulty they would have to face. And to the unsuccessful competitors he would say that he felt a strong under-current of sympathy with them, for it was often his lot to be in the same position as they were that day. He accepted his defeat pretty readily, however—perhaps too readily; he felt the examination had been fair, and he knew the prizemen were worthy of their prizes. He trusted they would be equally philosophical; and like valiant knights accept their defeat without smarting

[5] Tennyson, *In Memoriam*, canto 64.

under a sense of moral or intellectual disheartenment. There was no harm in getting a few tumbles in early life; one learnt from them that there were many in the world as clever and cleverer than oneself; that patience, perseverance, and industry were in the long run as serviceable or more serviceable than cleverness; and that by these qualities, though one might not gain the goal quite so quickly or brilliantly, one would arrive there safely in the end just the same. In touching upon the question whether it was essential that a boy should go to school with a large number of other boys in order to get a knowledge of right action, or of scholarship, or skill in languages and science, he remarked that there had been many great and illustrious men who were simply home-taught or self-taught, and gave as an example the brilliant achievements of Demosthenes, who by dint of patience, perseverance, and industry overcame all his natural disadvantages and raised himself upon a pinnacle of immortal fame. He referred also to Pitt, the youngest Prime Minister England ever had; to Sir Benjamin Brodie, the great surgeon, a man learned in many sciences; to Sir Charles Bell, the great physiologist and surgeon; to Charles Darwin, the naturalist; to John Stuart Mill, the logician and metaphysician; to Henry Thomas Buckle, the author of the *History of Civilization in England;* to Thomas Henry Huxley, and to John Hunter, the last mentioned having been the founder of scientific surgery, a great pathologist, physiologist, and comparative anatomist. To one whose mind was obsessed as John Hunter's was by a close and constant study of Nature there was an immense field for the exercise of thought, imagination, and observation. In conclusion, Sir Henry Morris said that for some years he had given many hours, he might even say some few days annually to the interests of the College and the well-being of those who were in residence there; and he liked to indulge the fancy that, in what might seem to them the dim future, but what to him in comparison seemed not very far away, there might linger in their recollection a faint tradition that the old fogey of a Treasurer who had been addressing them that day had a great love for the College, and that their hopes were his hopes, that they would each make a great success of their life, and bring honour and renown to their Alma Mater.

At the close of the proceedings in the schoolroom the visitors adjourned to the grounds, where refreshments were provided. Subsequently the Officers' Training Corps paraded, and a gymnastic display was given by members of the school.

Great interest was taken by the visitors, especially by numerous old Epsomians, in the additions and improvements to the college buildings which have been made by the council in recent years at a cost of considerably over £20,000. These comprise the Markham Skerritt science block; an up-to-date gymnasium with a fencing gallery; a music hall for concerts and class teaching, with separate sound-proof music practice rooms; an armoury, with stands for 200 rifles; a new carpenter's shop; the rearrangement of the prefects' studies; a subsidiary dining-hall; improved common room; accommodation for the masters; and increased box-room, changing-room, and lavatory accommodation for the boys.

SLEEPING SICKNESS AND BIG GAME.

COLONIAL OFFICE COMMITTEE.

THE Secretary of State for the Colonies has nominated a Committee to report:

1. Upon the present knowledge available on the questions of the parts played by wild animals and tsetse flies in Africa in the maintenance and spread of trypanosome infections of man and stock.

2. Whether it is necessary and feasible to carry out an experiment of game destruction in a localized area in order to gain further knowledge on these questions, and if so to decide the locality, probable cost, and other details of such an experiment, and to provide a scheme for its conduct.

3. Whether it is advisable to attempt the extermination of wild animals, either generally or locally, with a view of checking the trypanosome diseases of man and stock.

4. Whether any other measures should be taken in order to obtain means of controlling these diseases.

The committee will be composed as follows:

The Right Hon. the Earl of Desart, K.C.B. (Chairman).
Mr. E. E. Austen, British Museum (Natural History).
Dr. A. G. Bagshawe, Director of the Tropical Diseases Bureau.
Dr. Andrew Balfour, C.M.G., late Director of the Wellcome Research Laboratories, Gordon College, Khartoum.
Sir John Rose Bradford, K.C.M.G., Secretary of the Royal Society.
Mr. E. North Buxton, Chairman of Quarter Sessions, Essex.
Dr. W. A. Chapple, M.P.
Sir Mackenzie D. Chalmers, K.C.B., C.S.I.
Lieutenant-Colonel Sir W. B. Leishman, F.R.S., Professor of Pathology, Royal Army Medical College.
Sir Edmund G. Loder, Bart., Vice-President of the Zoological Society.
Dr. C. J. Martin, F.R.S., Director of the Lister Institute of Preventive Medicine.
Mr. J. Duncan Millar, M.P.
Dr. P. Chalmers Mitchell, F.R.S.. Secretary of the Zoological Society.
R. Newstead, F.R.S., Professor of Entomology in the Liverpool University School of Tropical Medicine.
Mr. H. J. Read, C.M.G., Colonial Office.
The Hon. L. Walter Rothschild, F.R.S.
Sir Stewart Stockman, Chief Veterinary Officer, Board of Agriculture and Fisheries.

Mr. A. C. C. Parkinson, of the Colonial Office, will act as Secretary.

SEVENTEENTH INTERNATIONAL MEDICAL CONGRESS, AUGUST 6TH–12TH.

OPENING MEETING.

THE Seventeenth International Congress of Medicine will be opened in London at a general meeting which will take place at the Albert Hall, Kensington, at 11 a.m. on Wednesday, August 6th.

The President of the Congress, Sir Thomas Barlow, Bart., M.D., President of the Royal College of Physicians of London, will give a short introductory address, and H.R.H. Prince Arthur of Connaught, speaking in the name of the King, will declare the Congress open. Sir Edward Grey, K.G., will then deliver an address of welcome. A report on the general arrangements will be presented in a few words by Dr. W. P. Herringham, General Secretary, and each foreign delegate, speaking in turn in alphabetical order, will briefly address the meeting. The proceedings will be brought to a close by short addresses by the President of the Permanent Committee of International Medical Congresses (Professor Waldeyer) and of the International Association of the Medical Press (Dr. Lucas-Championnière).

GENERAL SESSIONS: ADDRESSES.

There will be five other general sessions. At the first, on the afternoon of Wednesday, August 6th, Dr. Chauffard, Professor of Clinical Medicine in the University of Paris, will give the address in medicine; at the second, on Thursday, August 7th, the address in surgery will be given by Dr. Harvey Cushing, Professor of Surgery in the University of Harvard; at the third, on Friday, August 8th, Professor Paul Ehrlich, Director of the Royal Institute of Experimental Therapy, at Frankfort-on-Main, will give the address in pathology; and at the fourth, on Monday, August 11th, Professor W. Bateson, F.R.S., Director of the John Innes Horticultural Institution at Merton, Surrey, will give an address on heredity. Professor Chauffard's address will be given at 5.30 p.m., the others at 2 p.m. On Tuesday, August 12th, at 3 p.m., the Right Hon. John Burns will give an address on public health, and at 4 p.m. on the same day the closing meeting of the Congress will be held.

OFFICES AND GENERAL ARRANGEMENTS.

The offices of the Congress are in the Albert Hall, Kensington Gore. The hall can be reached by omnibus from all parts of London, either direct or by changing at Hyde Park Corner. The underground railways have no stations very near the hall; the nearest on the District Railway are South Kensington or High Street, Kensington; from the latter an omnibus passing the door can be obtained. The nearest station on the Piccadilly Railway (electric tube) is South Kensington, but by alighting at Knightsbridge an omnibus direct to the hall can be obtained.

The entrance to the hall is by the north door facing the Albert Memorial. On entering, members of the Congress will find a staircase on the left leading to the east crush room, where a general post office, telegraph, telephone, and *post restante* will be established. The staircase on the right leads to the west crush room, where the Congress bureau will be established; there each member will find an envelope corresponding to the number of his ticket, in which will be enclosed notices awaiting him from the Executive of the Congress.

The whole of the ordinary arena of the hall will be covered by the great movable floor, which goes up to the loggia, on a level with the organ. The loggia on the one side will serve as bureaus, at which the member will exchange his *Carte d'Identité* for the card of membership.

It is recommended that a member should, if possible, apply on Tuesday and get his card of membership, register his London address, and put his name down for such excursions or entertainments as he wishes to attend. The distribution of these tickets will be settled by lot. He should then go both to the post office and the Congress Bureau for letters and any communications addressed to him by the executive of the Congress.

It should be added that members in London on Monday will find the offices and bureaus open on that day, and may then register their names and addresses.

Letters and telegrams should be addressed to the name of the member, International Congress of Medicine, Albert Hall, London, S.W.

The loggia or boxes at which the cards of membership can be obtained will be numbered according to the number of the *carte d'Identité*, and information and tickets for excursions will be issued at the boxes on the opposite side of the floor.

The offices in the arena must be closed from 10.30 a.m. to 1 p.m. on Wednesday owing to the opening meeting on that day.

The office of the Permanent Commission of the International Congress of Medicine will be in Room No. 6 of the University of London Imperial Institute, and the committee room for the Overseas Dominions of the British Empire will be in the same building.

General Entertainments and Arrangements.

Tuesday, August 5th.

On Tuesday evening the Government is giving an official dinner, which will be presided over by the Lord President of the Council. The dinner, to which several invitations have been issued by the Government, will take place at the Hotel Cecil. On the same evening a reception for the visitors of German nationality will be held at the German Athenaeum.

Wednesday, August 6th.

On Wednesday evening the Congress soirée will be held at the Natural History Museum, South Kensington.

Thursday, August 7th.

On Thursday a garden party will be given at Bethlem Royal Hospital, and by the Dean of the Faculty of Medicine of the University of London at the College, Regent's Park.

A certain number of invitations will also be issued to lunch at the Royal Free Hospital, and to visit the Middlesex Hospital in the course of the afternoon, and there will be an afternoon reception at King's College Hospital. In the evening there will be soirées at the Royal College of Surgeons of England at the Royal Society of Medicine, at the Royal Army Medical College, and at the Grocers' Company, and the Apothecaries' Society has issued invitations to dinner on that evening.

Friday, August 8th.

There will be garden parties at St. Bartholomew's Hospital and at St. Thomas's Hospital, and in the evening the Corporation of London will give an entertainment to the Congress at the Guildhall.

Saturday, August 9th.

On Saturday the King will give a garden party at Windsor Castle. There will be also a half-day excursion to Brighton.

Sunday, August 10th.

Mr. W. Astor, M.P., is issuing invitations to a garden party at Cliveden, near Taplow, on Sunday afternoon, and the Zoological Gardens will be open to the inspection of members. The Corporation of Harrogate is issuing invitations to visit that town and inspect the baths.

Monday, August 11th.

Sir William Lever will issue invitations to a garden party, and garden parties will be held also at Guy's Hospital and University College Hospital, and Middlesex Hospital will again be open to inspection.

A lodge meeting of medical freemasons will be held at 4.45 at the Freemasons' Hall, preceded by a reception at the Connaught Rooms at 3.45 p.m. The Grand Master, Lord Ampthill, G.C.S.I., will preside, and brethren who wish to attend should communicate with Dr. Probyn Williams, 13, Welbeck Street, W.

On this day there will be a half-day excursion to Stratford-on-Avon.

In the evening Lord Strathcona will give a soirée, and the President, Sir Thomas Barlow, is issuing invitations to dinner.

Tuesday, August 12th.

On this day there will be limited excursions to Cambridge and Oxford.

Wednesday, August 13th.

The Corporation of Bath are issuing invitations for excursions to that city to inspect the baths.

Pathological Museum and Exhibitions.

The Pathological Museum will be arranged in the Imperial College, South Kensington, and an exhibition of drugs, books, appliances, and apparatus will be open during the Congress in the exhibition building immediately behind the Imperial Institute; it has been arranged by the *British and Colonial Druggist*.

The Museum of the History of Medicine, collected by Mr. H. S. Wellcome, the inauguration of which on June 24th was recorded in the JOURNAL of June 28th, p. 1379, will be open to inspection during the Congress.

Subsidiary Meetings.

The meeting of the International Association of the Medical Press which takes place on Tuesday, August 5th, is referred to elsewhere.

An international conference on post-graduate medical instruction will be held in the Jehangir Hall of the University of London on Thursday, August 7th, at 9.30 p.m. Professor Kutner is acting as secretary.

A meeting of surgeons interested in urology will be held in the Jehangir Hall on Monday, August 11th, at 3 p.m.

The meetings of the Universal Esperanto Medical Association will take place in the Geological Laboratory of the Royal School of Mines, South Kensington. At the first meeting, which will be held on Friday, August 8th, at 11 a.m., short lectures on Esperanto and the medical profession will be delivered in English, French, German, Russian, and other languages. Members of the Congress are cordially invited. Another meeting will be held on Monday at the same hour and place. An interesting programme of papers on various medical and surgical subjects has been arranged; these will be read and discussed in Esperanto.

The annual luncheon of the Continental Anglo-American Medical Society will be held at the Café Royal, Regent Street, on Thursday, August 7th, at 1 p.m.

On Tuesday, Wednesday, and Thursday next week the International Association of Medical Museums will hold its second triennial gathering. The proceedings, which include the reading of a large number of papers and many demonstrations regarding museum technique, will commence each day at 2.30 p.m., the work on the first day being done in the Museum of the Royal College of Surgeons of England, and on the second and third days in the Museum of the International Congress at the Imperial College of Science. The President of the Association is Professor A. S. Warthin of Michigan, who, on the completion of the formal business on the first day, will deliver an address dealing with the ideals and functions of the Association.

Section of Bacteriology and Immunity.

The President of the Section is Professor Sims Woodhead of Cambridge; the Vice-Presidents, Professors G.

Dreyer, C. J. Martin, and R. Muir; the Secretaries, Dr. Carl H. Browning, Professor E. J. McWeeney, and (Acting Secretary) Dr. J. A. Arkwright, Lister Institute, Chelsea, S.W. The meetings will be held in the Metallurgical Theatre, Royal College of Science, South Kensington (entrance in Exhibition Road).

The following arrangements have been made for the business of the Section:

Thursday, August 7th.—Morning: Discussion on theories of immunity and anaphylaxis. Reporters: Professor A. Besredka (Paris), Professor E. Friedberger (Berlin), and Professor Ch. Richet (Paris). *Afternoon:* Independent papers by Dr. H. de Waele on anaphylaxis; by Dr. R. Weil (Cornell University) on experiments on the cellular theory of anaphylaxis; by Dr. F. H. Thiele (London) on the toxicity and pathogenicity of bacteria; and by Dr. D. Jacobson (Paris) on anaphylaxis in the serum-therapy of tuberculosis.

Friday, August 8th.—Morning: Discussion on cancer (jointly with Section IIIA). Reporters: Dr. E. F. Bashford (London) and Dr. E. Freund (Vienna). *Afternoon:* Independent papers by Dr. Archibald I. Leitch (London) on the diminution of resistance to repeated inoculation of mouse cancer; by Dr. I. Levin (Columbia University) on the mechanism of immunity in experimental cancer; by Drs. W. L. Moss, C. G. Guthrie, and J. Gelien on diphtheria carriers; and by Dr. Jacobson (Paris) on the local action of Marmorek's antituberculous serum.

Saturday, August 9th.—Morning: Discussion on the nature of virulence. Reporter: Professor Dr. Ritter von Gruber (Munich). No meeting will be held on this afternoon.

Monday, August 11th.—Morning: Discussion on filter-passers. Reporters: Professor Dr. Loeffler (Greifswald) and Professor Sir John McFadyean (London). *Afternoon:* Independent papers by Professor E. E. Irons (Chicago) on gonococcal immunity, with special reference to diagnosis and treatment; by Dr. W. J. Penfold (London) on the inhibition of bacterial growth; by Drs. St. Serkowski and J. Wisniewski (Warsaw) on the acid-fast quality of tubercle and parátubercle bacilli; and by Dr. Guido Arena (Naples) on the toxic and antitoxic properties of pulmonary extract.

Tuesday, August 12th.—Morning: Discussion on leprosy and allied bacilli. Reporters: Dr. C. W. Duval (New Orleans) and Major Rost (Indian Medical Service). *Afternoon:* Independent papers by Drs. St. Serkowski and Wisniewski (Warsaw) on the virus of a psoriasis and the experimental infection of the ape; by Professor N. F. Surveyor (Bombay) on a new method for the treatment of bacterial infections; and by Dr. Fenton B. Turck (New York), on serum changes and lesions produced in animals by feeding with the colon bacillus. The following papers will also be taken as opportunity offers itself: By Dr. Kurt Meyer (Stettin), on lipoid antibodies; by Dr. W. Fornet (Berlin), on a germ-free cow-pox lymph; by Drs. Bertrand and Cohendy (Paris); by Dr. W. Broughton Alcock (Paris), on vaccination by living pyogenic cocci; by Drs. H. Fraser and W. Fletcher (Federated Malay States), on the question whether the *B. leprae* has been cultivated; by Professor Dr. Detre (Budapest), on the theory of therapeutic injections; and by Dr, Sophie Fuchs-Wolfring, on spirochaetes in the blood.

A Ladies' Entertainment Committee has been formed.

LITERARY NOTES.

AMONG the books announced for publication by Mr. Fisher Unwin is one entitled *Lord Lister, His Life and Work*, by Dr. G. T. Wrench.

Messrs. Cassell are preparing for publication a new book by Sir Frederick Treves entitled *The Country of "The Ring and the Book."* It is a critical study of Browning's poem, and an illustrated description of the road from Alezzio to Rome is given. In addition to the photographs taken by the author, there will be reproductions of many maps contemporary with the crime, and a coloured frontispiece of the heroine, Pompilla.

Messrs. Longmans will shortly issue a new book by Dr. W. McC. Winklyn on *London Public Health Administration*, intended specially for the use of foreign visitors. It is designed to answer two classes of questions: First, by what authority is any given health service carried on? and secondly, what is the nature and position of that authority? A table of public health statutes completes the volume, which, we note with satisfaction, is provided with an index.

Nostradamus (1503–1566), the assumed name of Michel de Notredame, the French astrologer, who had a great name as a seer in the sixteenth century, was a doctor of medicine of Montpellier. He was physician in ordinary to Charles IX. The following stinging epigram on him was written by Stephen Jodelle:

"Nostra damus, cum falsa damus, nam fallere nostrum est:
Et cum falsa damus, nil nisi nostra damus."

The following paragraph is quoted in the *Journal of the American Medical Association* of June 14th as from B. Joseph in the *Vermont Medical Monthly*:

Advertismo occulta is not yet described in textbooks, though numerous sporadic examples have occurred within a year. Students of mental diseases would describe it as a form of "exhibitionism." It is an affection of the sense of justice. Recently a well-known surgeon came down with it. A review of the reported cases seems to show that this disease particularly affects surgeons. In brief, advertismo occulta is that form of advertising in the lay press or magazine of which the subject (hero) is not supposed to be aware that he is being described.

The humour of this paragraph would not be spoilt if the author had taken the trouble to make his terminology more probable. He might have spoken of "advertismus occultus," which would be Latin of a doggy kind; or of "advertismo occulto," which might be Italian of a sort. Perhaps "advertismo occulta" is intended as a subtle caricature of what sometimes passes for Latin in medical writings.

We have received from Mr. H. K. Lewis a *Selected List of Works in Medicine and Surgery*, together with a pamphlet describing the efforts of the firm to supply the literary requirements of the medical profession. These have been prepared especially for the information of visitors to the International Medical Congress. When Mr. Lewis extended his premises in Gower Street some seven or eight years ago we described him as the Mudie of Medicine, and we take this opportunity of repeating that if the name of Mudie has become a household word in general literature, that of Lewis has a corresponding significance in the world of medical books. A special invitation to visit the establishment (which has been in existence for seventy years), in six languages, including Japanese, is issued with the pamphlet.

The history of the growth of English dictionaries is interesting. The first of which there is record is that produced by Bullokar in 1616; although he called it a "compleat dictionary," it contained only 5,080 words. In 1623 there appeared a dictionary by Cockeran; a ninth edition of this was published in 1650. Thomas Blount's *Glossographia* followed in 1656, with a slightly increased vocabulary, but was soon superseded by Edward Phillips's *New World of English Words*—a small folio of 300 pages, containing 13,000 words. Phillips, who was a nephew of Milton, published his work in 1658. A sixth edition, which seems to have held its ground for nearly half a century, was edited and published with a vocabulary enlarged to 20,000 words by John Kersey, in 1706. In 1713 Kersey issued *A New English Dictionary*, which, though printed in smaller form, contained many more words than Phillips's book. In 1721 appeared Nathan Bailey's *English Dictionary*, in the compiling of which the first attempt was made to collect a complete vocabulary of the English words then in use. Bailey's work contained 45,000 words and it passed through twenty-six editions. Bailey's work was followed by one compiled by John Wesley, which appeared in 1753, of which the eminent author, with characteristic modesty, declared: "Many are the mistakes in all the other English dictionaries which I have yet seen, whereas I can truly say I know of none in this"! Two years later appeared the work which gained for Samuel Johnson the title of the Great Lexicographer. Johnson's dictionary was published on April 15th, 1755, and contained 50,000 words, and was republished many times. This total was not materially increased until the appearance of Webster's *American Dictionary* in 1828, followed by Joseph Worcester's *Comprehensive Pronouncing and Explanatory English Dictionary* in 1830, and their subsequent revisions. Even then the tide of English speech did not reach the flood. Worcester's dictionary contained but 105,000 terms, and Webster's 160,000. Then there appeared the revision of the *Imperial Dictionary* for which the editors claimed 200,000 words. This book was followed by Dr. Funk's *Standard Dictionary*, with 318,000 words, published in 1894, increased in Funk and Wagnall's *New Standard Dictionary* to the high-water mark—450,000 terms—in 1913. In mere number of words this new work, to be issued in September, exceeds all others, notwithstanding the fact that rigid rules of exclusion were strictly enforced and the ephemerae of the moment, as well as all obsolete words not recorded in living books, are to be omitted.

British Medical Journal.

SATURDAY, AUGUST 2ND, 1913.

THE INTERNATIONAL MEDICAL CONGRESS.

The International Congress of Medicine, which will be opened next week in the Albert Hall by Prince Arthur of Connaught, as representative of the King, will be the seventeenth of these periodical gatherings of medical practitioners of all nations. It is estimated that the attendance all told will number between 6,000 and 7,000. It will therefore be one of the largest meetings ever held, and the arrangements for the entertainment of members have been made on so generous a scale that there is every prospect of its being also one of the most brilliant. There will be five general addresses: in medicine by Professor Chauffard of Paris, in surgery by Professor Harvey Cushing of Harvard, in pathology by Professor Paul Ehrlich, on heredity by Professor W. Bateson, and on public health by the Right Hon. John Burns. The programmes of the different sections, which have been published from time to time in the British Medical Journal, show what an extensive field of work lies before the Congress. A comparison between the range and variety of subjects to be dealt with and those of the last International Medical Congress held in London in 1881 is a striking proof of the progress of medical science during the last thirty-two years. In 1881 there were fifteen sections; this year there are twenty-three, besides three subsections. At the forthcoming Congress embryology has its place by the side of anatomy; bacteriology, chemical pathology, neuro-pathology, urology, tropical medicine, radiology, and the history of medicine have each sections to themselves. Laryngology, which had a hard struggle for recognition in 1881, and finally had to be content with being relegated to a subsection, now divides with rhinology the honour of a full section. A mere glance at the programme shows that the whole face of medical science has changed. Besides the new territories—the surgical treatment of brain tumours, the vast development of abdominal surgery, tropical pathology, and hygiene, the applications of the *x* ray and of radium, the use of vaccines—that have been formally annexed to the empire of medicine, there is a vast number of new things, such as theories of immunity, the physiological function of internal secretions, the therapeutic uses of thyroid extract, adrenalin, and numerous other substances, the revolution in the diagnosis and treatment of syphilis wrought by the Wassermann reaction, and the introduction of salvarsan, to name but a few of the most recent advances. In every department of medical science new terminology indicates new lines of research, not a few of which have already led to results which make the medicine of 1881 seem almost antiquated.

A short history of the rise and development of the International Medical Congress will serve to show how it came into existence and how it has grown to be the great landmark of progress in the healing art. It did not spring from the happy conception of any "true begetter" as Minerva is fabled to have sprung full armed from the head of Jupiter. It was indeed, as Lord Thurlow said of the Duke of Grafton, the accident of an accident, and its beginnings were small and casual. In 1867, when the great Exhibition was held in Paris, advantage was taken of this fact to arrange that the customary annual meeting of French doctors should be held in that city. In view of the numbers who were expected to crowd from all parts of the world to what Victor Hugo delighted in calling the Ville Lumière, it was suggested that special invitations to take part in the proceedings of the meeting should be sent to foreign members of the profession who might be attracted to the Exhibition. Consequently some five hundred practitioners from various parts of the civilized world attended, and as a matter of courtesy several foreign vice-presidents were appointed. The meeting was so successful that one of the Italian delegates, Dr. Pantaleoni, proposed that an international medical congress should become a permanent institution. This suggestion was well received; it was agreed that the meeting in Paris should be regarded as the first Congress, and it was decided to hold the second in Italy in recognition of the fact that the idea had come from a native of that country. Rome would have been the natural place of meeting, but some doubt was felt whether the Pope, who was at that time the temporal ruler of the Eternal City, would give the Congress the welcome to which it thought itself entitled. Accordingly the meeting was held in Florence in 1869, under the presidency of Dr. Salvatore de Renzi of Naples, who, besides being an eminent physician, was a man of great learning and the historian of the famous University of Salerno. He welcomed the members of the Congress in choice Latin, an example imitated by Professor Baccelli at the Congress held in Rome in 1894. If, as we have often contended, the use of Latin as the international language of science should be revived, the linguistic difficulties which have in the past been a serious hindrance to the work of these congresses would disappear. There is nothing impossible in such a revival, but as long as Latin is taught in our schools as it is now there is little hope of this coming about.

There was a scanty attendance of foreigners at the Florence meeting, and the future of the Congress was gravely imperilled by the bitter feelings caused by the Franco-Prussian war, which broke out in the following year. Nevertheless, an International Exhibition held in Vienna in 1873 afforded an opportunity of holding another, which though small was very successful. At this Congress it was for the first time resolved to recognize three official languages—English, German, and French. The fourth Congress was held in Brussels in 1875. It was opened by the King of the Belgians, who took so much interest in the proceedings that he was present at many of the sittings; it did valuable work, especially in regard to epidemic cholera, antiseptic surgery, and the management of lying-in hospitals. It was at the Brussels meeting that the Congress was first divided into sections. The fifth Congress was held at Geneva in 1877, when there were six sections. In 1879 the sixth meeting was held at Amsterdam, and there were nine sections. The seventh meeting, held in London in 1881, marked the beginning of a new era in the history of the Congress; over 3,000 members, of whom one-third were foreigners, attended. On that occasion the number of sections rose to fifteen, and the meeting was made memorable by the addresses of Paget, who was the president; of Virchow, who took the value of pathological

experiments as his theme; and of Huxley on the connexion of the biological sciences with medicine. Pasteur was present, and when Koch demonstrated his method of cultivating bacilli on organic media exclaimed, in spite of his patriotic dislike of everything German, "C'est un grand progrès, Monsieur." The next meeting, which was held at Copenhagen in 1884, was attended by 1,700 members. The ninth Congress was held at Washington in 1887, and although, owing to certain domestic difficulties in the American profession, it was not so representative of international medicine as the previous meetings, European members had no reason to complain of their reception. The tenth Congress was held at Berlin in 1890, and notwithstanding an attempt by some leaders of the profession in France to boycott the Congress, it was attended by 6,000 members. The eleventh Congress was held in Rome in 1894, and the twelfth at Moscow in 1897. Three years later it was for the second time held in Paris, when over 6,000 members and delegates attended. In 1903 it met at Madrid, in 1906 at Lisbon, and in 1909 at Budapest. The Congress has thus made the round of the principal European capitals besides crossing the Atlantic. At Budapest it was decided that the Congress which had been held at first every two years, then every three years, should be held every four years. We think that in these days when congresses on special departments of medicine are so frequent, the interval between the meetings of the International Medical Congress might with advantage be extended to five years.

Doubts from time to time have often found expression as to the practical utility of the Congress, but to our mind there can be no question that science would lose greatly by the discontinuance of these periodical assemblies. They afford opportunities for taking stock of the state of knowledge at the time. They also bring men who have previously been only names to each other face to face. Work in which lie the hopes of the progress of the human race must needs gain in accuracy by the workers seeing each other in the flesh and thus learning the extent to which the statements made require to be corrected by means of the personal equation. Another advantage is the interaction of mind on mind, each quickened to the highest degree of activity by the glow of living debate. Moreover, international congresses help to counteract what Matthew Arnold called the "vulgar and retarding" effects of that narrowest form of provincialism which limits men's intellectual outlook to their own country. There are too many doctors who do not think it worth while to learn at first hand what is being done elsewhere. The doctor should have the spirit that animated Samuel Johnson, who, when at Oxford, was overheard saying to himself in a strong emphatic voice, "I have a mind to see what is being done in other places of learning. I'll go and visit the universities abroad. I'll go to France and Italy. I'll go to Padua. . . . For an Athenian blockhead is the worst of blockheads." The Athenians, as we know, spoke of other nations as "barbarians." Finally, if international congresses do not, as has been suggested, directly tend to maintain the peace of the world, they probably do much to promote friendly relations between the representatives of what has been called the profession of the future in civilized countries. Medicine has no nationality; but doctors are human, and there are many national prejudices and jealousies which fade away by the mellowing influence of personal intercourse.

THE ASSOCIATION AND SCIENTIFIC MEDICINE.

THE President of the Section of Ophthalmology at the annual meeting this year broke with the custom which, with the encouragement of the Council of the Association, has been established against the delivery of a formal address at the opening of a Section. That there is no absolute rule on the subject is a good example of the elasticity always sought in framing the rules of the Association, and of its desire to leave all reasonable latitude to individual initiative, the idea doubtless being that when a President feels that he has something to say which can most appropriately be said on such an occasion, no hindrance should be placed in his way. Had there been any such absolute rule the Section, and therefore the pages of the JOURNAL, and through it the whole Association, would have been deprived of a most interesting and stimulating allocution. The Association has, perhaps, never had the credit that is due to it for the broad-minded encouragement it has given to young men and young sciences and to causes which have not grown popular; nor has it had full credit for the many ways in which it has fostered new departures in scientific medicine. Reference is not now intended to the money it has voted annually for many years for research scholarships, and in grants for special researches. If we were to go back through the catalogue of its scholars and grantees we could make out a list of men, now distinguished in every branch of study and practice, whose early efforts were helped, and in many cases made possible, by the assistance voted from the funds of the Association. We are thinking rather of Mr. Bickerton's theme—the influence of the British Medical Association in the establishment of one special branch of medical science—a theme which might be given a more general application. There is no gainsaying the historical facts about the study of ophthalmology in this country which he gathered together and placed in order. They make it abundantly clear that it was the Association which first gave the disciples of the new science a rallying point, and first afforded them a platform from which to bring to the notice of their brethren the many ways in which their special study threw unexpected lights on the practice of general medicine and surgery, for it is now a commonplace that the study of the eye and of the disorders of vision has illumined many of the darkest regions of neurology, and has shown the way to reforms in personal hygiene and in education.

The recognition of ophthalmology as a distinct department of medical and surgical science and practice was slowly achieved. The staffs of the general hospitals long stood in the way of the legitimate development of specialism, and admitted its demands at last only grudgingly and of necessity. Ophthalmology, as it was one of the first specialities to claim recognition, was one of the earliest sufferers. The opposition led to the foundation of special hospitals, and financial considerations sometimes impelled the founders to associate the treatment of diseases of the ear with those of the eye, a combination which placed a serious impediment in the way of the growth of either. When eventually the necessity for the recognition of ophthalmology as a special study was admitted by the medical schools, the establishment of special departments at the general hospitals came too late to prevent the duplication of effort, which might have been avoided by the exercise of greater foresight.

In another direction also the growth of ophthalmology was slow. Owing, perhaps, to the fact that students heard little or nothing about it during the curriculum, the number of those who in after-life took any real interest in diseases of the eye was small. In 1836 Mr. Richard Middlemore, of Birmingham, an enthusiastic worker in this special sphere, and a recorder of facts, contemplated the publication of a journal devoted to ophthalmology; but he had to realize that the time was not ripe. Some thirty years later, in 1865, Zachariah Lawrence and Thomas Windsor sent forth the *Ophthalmic Review* with hopes of the brightest, but they also had to realize that their venture was in advance of the demand. Another thirteen years had to elapse before the mist disappeared. The late Mr. C. G. Wheelhouse of Leeds, who throughout a long life was an active worker for the British Medical Association, when, in 1878, he freed ophthalmic surgery from the control of the general surgeon, did a greater service to scientific medicine than he himself at the time fully knew.

The formation of a Subsection of Ophthalmology and Otology at the Annual Meeting of the British Medical Association in 1879 was followed by the recognition of a Section of Ophthalmology at the Annual Meeting in 1880, and the same year saw the foundation of the Ophthalmological Society of the United Kingdom. Two years later, in 1882, the courage and energy of Grossmann of Liverpool, Priestley Smith of Birmingham, and Storey of Dublin in establishing the *Ophthalmic Review* were rewarded by a degree of success sufficient to encourage them to persevere, and the *Review* has been published regularly ever since. In the same year, 1882, Vose Solomon of Birmingham, addressing the Ophthalmological Section at the Annual Meeting at Worcester, said that the signs "augur favourably for the creation of a British school of ophthalmology, and warrant us in looking hopefully to the time as near at hand when we shall be no longer living, as it were, in a borrowed light, but in one generated by the national genius and enterprise of the most practical people of the world." The initiative of Doyne in establishing an Oxford school, and the enterprise of Stephenson and Oliver in founding *The Ophthalmoscope*, and thus providing a complete bibliography, have given increased impetus to the movement. When the day comes for the history of ophthalmology in Great Britain and Ireland to be written, the historian, whatever else his source of information may be, will have to seek the pages of the British Medical Journal, in which the action of the British Medical Association in promoting the recognition of ophthalmology as a distinct branch of practice is recorded.

We would prefer to avoid using the term "the British school of ophthalmology," for there are no national schools of ophthalmology; from the first the study has been cosmopolitan. Bowman, the President of the first Section of Ophthalmology of the British Medical Association, and the first President of the Ophthalmological Society of the United Kingdom, used to advise his pupils to go to study under von Graefe, and von Graefe would ask them, Why do you make this long journey to me when you have Bowman in your own country? Bowman was, indeed, one of the fathers of ophthalmology. He was a man of high capacity, originality, and independence of mind, and possessed that quality designated by the much-abused word "charm." He would undoubtedly have achieved distinction in any calling he elected to follow. He was probably drawn to ophthalmology by his strong artistic insight—he was a friend and one of the earliest patrons of Watts—for of all departments of surgery or medicine the study and treatment of diseases of the eyes calls most insistently for that sureness of touch and deftness of manipulation which are parts of what we wonderingly admire in the great masters of the pencil or the brush.

We have ventured to suggest already that Mr. Bickerton's theme is susceptible of a wider application; we believe that a good case might be made out to support the contention that the British Medical Association has had a similarly beneficent action on other special departments of medicine and surgery, on laryngology, on otology, on dermatology, even on gynaecology, and most certainly, and perhaps most of all, on tropical medicine and hygiene. This is a record of which every member of the Association may legitimately be proud.

PROPOSED ALTERATIONS IN THE REGULATIONS OF THE ASSOCIATION.

A brief review of the changes in the constitution and regulations of the Association which the Annual Representative Meeting desired to be made may be convenient to members who have not the leisure or inclination to follow the details through the reports of the proceedings of the meeting published in the Supplement for this and last week. The changes are designed to remedy certain defects in the working of the machinery disclosed during the last ten years, some of which were foreseen by members whose views were not at that time found acceptable by the majority. The changes now proposed must be embodied in new regulations, which after they have been carefully drafted with legal assistance will be submitted to the Divisions and a special meeting of the Representative Body for approval.

It will be remembered that it was at first proposed to obtain the wider powers and increased freedom of action desired by forming a new company to take over the duties and assets of the existing Association. Counsel, whose assistance was sought in drafting the articles and by-laws of the proposed new company, advised that the objects sought might most effectively be obtained under a charter from the Crown. A draft charter was accordingly prepared, but some of its provisions and omissions excited strong opposition from a considerable body of members, and as the compromise proposed failed to find favour with the majority, the Privy Council notified that it would not be prepared to recommend the grant of a charter. The Association therefore reverted to the proposal to form a new company, but very careful consideration showed that the advantages of this course were too problematic to justify perseverance in it. At the same time it was felt that certain disabilities under which the Association now labours in respect to the borrowing of money could be removed by relatively simple changes which the Court might be expected to sanction without difficulty. The Council therefore this year reported to the Divisions that while it was compelled to accept the opinion of the Organization Committee that it was inadvisable to proceed further at present with the proposed formation of a new company to take over the work and property of the existing British Medical Association, it felt fully justified in advising that the Association should take the necessary steps to obtain an extension of the memorandum of the present company to include the

power of borrowing money by mortgage or otherwise. Both recommendations were adopted by the Representative Meeting.

Various alterations in the constitution were approved by the Representative Meeting, many of them arising out of the scheme submitted by the council of the Metropolitan Counties Branch. That Branch had suggested that the Representative Body should be an assembly with full deliberative powers. This proposal met with opposition, and the resolution eventually adopted expressed the opinion that the Representative Body should be an assembly with deliberative powers, but that in speaking or voting on any matter the Representative of a constituency shall be under an obligation to give effect to what he believes would be the opinion of his constituents on the question at issue. Such a regulation would apparently give a Representative a certain discretion to act on his own judgement in respect of matters which have come to his knowledge during the Representative Meeting, or at some date later than the last meeting of the Division at which he was instructed.

The Representative Meeting also decided that it would be advisable that it should have power to instruct the Council to act for it on any specified matter or matters in the intervals between the meetings of the Representative Body, but it refused to disturb the present mode of electing the Council. It did not come to any final decision with regard to the establishment of a special fund for the organization of the profession, on the ground that it was a matter which should be again submitted to the Divisions for their careful consideration, and that a special meeting of the Representative Body should be called to consider the results of this reference, and of the proposal to increase the annual subscription to the Association from 25s. to 2 guineas.

Perhaps the most important change in the constitution sanctioned by the Representative Meeting was that by which the Council will be given power to take a referendum on any decision of the Representative Body by a postal vote if it considers that this will be a more effectual way of obtaining the opinion of the Association on any matter than the method of taking a referendum by meetings of the Divisions. The Council will further be authorized to submit the question upon which a referendum is to be taken to one or more parts of the kingdom—that is to say, to England, to Scotland, to Ireland, to Wales, or to a Dominion separately, or in any combination it thinks proper. It will also be empowered to decide what majority of the votes received will justify it in making the result binding upon the members of the Association in the countries consulted. It will further have power to extend the referendum or postal vote to the whole of the profession. The meeting also determined that the Representative Body should have the right to instruct the Council not to carry out the procedure or policy in favour of which a vote had been taken in the Representative Meeting until a postal vote of the Association or the profession had been taken by the Council. This will be tantamount to the Representative Meeting itself having power to take a postal vote.

The Representative Meeting also decided that it was advisable that a Representative should be able to resign and that the Division or Divisions he represented should be able to elect a successor. It was decided also that a Division might by a two-thirds majority of those present and voting call upon a Representative to resign. Under the existing constitution a Representative is elected for the year and cannot resign, and the Division has no power to fill a death vacancy. Both of these defects in the existing regulations have caused inconvenience in recent times.

The desirability of modifying the areas of Divisions and Branches so as to make them coincide with insurance areas was considered, but it was not found feasible to make a general rule. On the other hand, it was agreed that the regulations of Divisions and Branches should be modified so as to ensure co-ordination between their action and that of medical members of Local Insurance Committees and Local Medical Committees.

It was agreed to appoint two new standing committees—an Insurance Act Committee and a Welsh Committee—and to appoint for this year special committees which will have the function, though not the legal status, of standing committees.

THE PRESIDENT OF THE LANCASHIRE AND CHESHIRE BRANCH.

THE annual meeting of the Lancashire and Cheshire Branch was held this year at Preston, and Dr. Robert Charles Brown was elected President for the third time. His interesting address, entitled "Surgical Milestones," appeared in the JOURNAL of July 12th. Dr. Brown gave a dinner in the Guild Hall to the delegates, local doctors and clergy, members and officials of the Corporation, and other prominent citizens of Preston. The guests included Sir James Barr, Sir Thomas L. Flitcroft, Mr. A. A. Tobin, M.P., and the Mayor of Preston (Councillor W. J. Hayhurst). After the loyal toast Mr. Edmund Dickson proposed the toast of "The Lancashire and Cheshire Branch," which was responded to by Sir Thomas L. Flitcroft. Mr. Tobin proposed "The Town and Trade of Preston." After referring to the historical associations of the town, he went on to speak in praise of Dr. Brown both as a medical man and as a citizen. Dr. Brown, he said, had added a page to the ancient history of Preston, and on that page was recorded the story of the President's warm heart, his professional skill, his tenderness to the sick and suffering, his continuous kindness to the very poorest, and his munificence to the town. Sir James Barr, in proposing "The President," said that Dr. Brown held a very unique position. He was the only man who had been elected three times President of the Lancashire and Cheshire Branch. It was not his (Sir James's) fault that Dr. Brown had not been President of the British Medical Association, for once he spent a night in Preston trying to persuade the medical men to hold the annual meeting in Preston. Dr. Brown was one of the two surviving honorary freemen of Preston, an honour which was very richly deserved, and of which every citizen of the town, as well as the members of the medical profession, felt justly proud. Dr. Brown, in reply, recalled some historical facts within his own experience. In 1838 the old North Union Railway was constructed, and this was followed in 1840 by the formation of the Preston to Lancaster, Preston to Fleetwood, and Preston to Longridge lines. He remembered the time when there were only ten policemen in Preston, when there was only one post office, when there were no parks or covered market, and when the railway station was a very insignificant structure. The toast of "The Visitors" was spoken to by Dr. Pilkington and Mr. Larkin (Liverpool), and by Councillor E. C. C. Firth, who said he wished that more of the medical men of Preston would make an effort to join the Corporation. We may add that Dr. Brown's first medical qualfications date as far back as 1858. He is M.B. of London University and a Fellow of both Royal Colleges. As we have more than once had occasion to state, he has shown the most enlightened liberality in his help to the Research Hospital

which is doing such good work at Cambridge. In recognition of his munificence the University of Cambridge conferred on him the honorary degree of M.A. Mr. Cartmell, a member of the Preston Town Council, recently referring to Dr. Brown's generous gift of an organ to the Grammar School, said the governors and the Education Committee greatly appreciated this gift, which was the latest of a long series of benefactions to his native town, by which Dr. Brown had earned the gratitude and admiration of his fellow-townsmen. We venture to add our congratulations to Dr. Brown on the well merited honours which he has received, and to express the hope that he may live many years to enjoy the satisfaction—the highest happiness which can fall to the lot of man—of feeling that he has done so much for his fellow men.

PROPOSED ROYAL COMMISSION ON VENEREAL DISEASES.

In the British Medical Journal of July 26th reference was made to a plea for the appointment of a Royal Commission on Venereal Diseases, signed by most of the recognized leaders of the medical profession in this country, and supported by a resolution passed by the Representative Meeting and the Section of State Medicine. The appeal was addressed to the public with the object of awakening it to the urgent necessity of steps being taken to stay the ravages of a class of diseases which, owing to the unwillingness to recognize the existence of immorality of a certain kind and its consequences characteristic of the British people, has caused them to pass by many crying evils with averted face. Worthy folk have salved their conscience with the comforting reflection that these diseases are the wages of sin; but, as doctors have too good cause to know, the innocent, too, suffer—often, indeed, more than the sinner. The intention of Sir Thomas Barlow, Sir Rickman Godlee, Sir William Osler, Sir Clifford Allbutt, and their distinguished co-signatories was therefore to arouse the public to demand a complete investigation such as would be ensured by the appointment of a Royal Commission. Although, with the honourable exceptions of the *Morning Post* and two or three other newspapers which have commented on the letter which appeared in its columns, the press has taken no notice of the matter, Dr. Chapple asked the Prime Minister on July 28th whether he intended to take action in the direction indicated in the medical manifesto. Mr. Asquith replied that the suggestion is receiving careful consideration. With this non-committal utterance we have to be content for the present, but the Premier may rely on it that now the question has been mooted it will not be allowed by the medical profession to remain dormant. In the meantime we quote a passage from an address by Professor Adami, in which the gravity of the evil is powerfully set forth: "With a fuller realization of the frequency of these congenital (venereal) diseases, of the havoc these are playing upon individual lives, the misery, ill health, and ruin they inflict, with the surer recognition of the presence and after-effects of what euphemistically we speak of as the contagious diseases brought about by more exact methods of diagnosis, such as the Wassermann reaction and the actual recognition under the microscope of the gonococcus and the *Spirochaeta pallida*, we have, during the last decade more especially, come to a realization of the hideous frequency of these diseases, and their ill effects upon the innocent of the second generation. When it is accepted that at least half of gynaecological practice is due to gonorrhoea and its results; that a large proportion of the cases of infantile blindness is of gonorrhoeal origin; that, as demonstrated by the Wassermann test, practically all the cases of locomotor ataxia and nearly all cases of general paralysis of the insane are of syphilitic origin; when we know that most cases of multiple successive abortions are syphilitic, and recognize the puny miserable parodies of humanity, doomed in most instances to an early death, that too often are the result of syphilitic disease in the parent; when we realize the preventable ills that follow in the train of these venereal diseases, I wholly agree that the time has come when we should no longer refer to these matters by circumlocution, when for the good of the coming generations we should openly wage war against gonorrhoea and syphilis, and, above all, should, for the safety and welfare of our children, instruct them as to the dangers they must ward against, not merely on account of their own health and happiness, but for the sake of the generations yet unborn." In considering the subject Mr. Asquith might with advantage study this statement by one of the foremost of English-speaking pathologists. One of the essential duties of a Government is to safeguard the public health. We gratefully acknowledge that, owing mainly to the insistence of the medical profession and under its guidance, much has been done in recent times. But while pains have been taken to prevent the pollution of water, milk, and food supplies, nothing has been done to counteract the contamination of the community by one of the worst forms of disease.

A SURGEON OF THE GRANDE ARMEE.

At a meeting of the Académie de Médecine held on July 15th, M. Delorme presented a work by Eugène Tattet entitled, *Journal d'un chirurgien de la Grande Armée—L. V. Lagneau*, with an introduction by M. Frédéric Masson, the great authority on Napoleon.[1] Louis Vivant Lagneau, who in 1868 was the oldest member of the Academy, was born in 1781. He took his doctor's degree in 1803. His inaugural thesis dealt with the different methods of treating venereal diseases; this, successively revised and enlarged till it became a work in two volumes, passed through seven editions and was translated into German, Italian, and Spanish. Lagneau was about to start in practice when he was caught in the toils of the conscription and perforce became an army medical officer. In 1812 he was surgeon-major of a regiment of the Young Guard, and at Waterloo he was surgeon-major of the third regiment of the Grenadiers of the Old Guard. He saw much active service in Italy, Prussia, Poland, Spain and Russia. He was present at the battles of Eylau and Friedland, at many of the actions in the Peninsular War, and he was with the Grande Armée in Russia, where he was present at Smolensk, the Moskowa, Krasnöe, and Beresina. He was also at Lutzen, Dresden, Leipzig, and Hanau. He was wounded during the campaign in France at the Fère-Champenoise and at Waterloo, where his ambulance was at the farm of the Belle Alliance near that of Larrey. In the course of his twenty compaigns he jotted down his impressions every day in small notebooks. His narrative is simple, sincere and modest. He unconsciously reveals himself in the book. He could appreciate the works of art he saw, and being a vigorous man in the prime of life he was fond of good cheer and loved generous wine. He also liked pretty girls, and hints that he was successful in amorous adventures. He was contented though his pay was small, as we gather from a reference to the subject when he speaks of the campaign in Saxony in 1813. During the month of April that year he received 282 francs, 50 centimes, after deduction of 10 francs for the band, 6 for the Invalides, and 1.50 for the drum major. And yet he was luckier than many of his comrades, for after 1815 he went back to civil practice, and, settling in a flat for which he paid a rent of 1,100 francs, he earned 18,000 francs (£720) a year. The summary fashion in which the services of many surgeons were dispensed with at the end of each compaign gave rise to much dissatis-

[1] Paris: Emile-Paul frères, 1913.

faction. The medical officers of the Grande Armée had much to complain of, notwithstanding the constant efforts of Percy, the Surgeon-in-Chief, to obtain better conditions for them. A significant story is told of Bruyère, who, throwing up his commission as surgeon-major, took service again as a private, and quickly rose to be a General of Division and a Count of the Empire, whereas none of the great surgeons and physicians of the Napoleonic era gained any title higher than that of Baron. Lagneau's account of the disastrous retreat from Russia is particularly interesting. He had as comrades in the bivouac and on the march his general Robert, the commandant adjutant-major Guillemin, and Lieutenant Desprès. They suffered comparatively little from the deadly cold, because they had taken the precaution to get at Moscow suits of sheep-skin and a tent of very thick canvas. When they reached the bivouac their first care was to pitch their tent—almost the only one, he says, in the army—in a situation sheltered from the north wind, which was more injurious than the cold and snow. Most commonly they were able to have a little straw torn from the thatch of some hut to lie on; this protected them from the snow, which was the usual bed in these circumstances. Wrapped in his thick driving coat, and under a good fur rug which he brought from Moscow, Lagneau says he was "as comfortable as in his bed covered with eider down." He has something to say about the use of alcohol in cold countries. He learnt by experience that in cold countries men can take alcoholic liquors without ill effects. As a rule he drank none of these liquors, which he did not like, and which caused in him a spasm of the pharynx. But in Russia he sometimes drank brandy and rum without any repugnance, and far from feeling the spasm of the throat, he says he would have allowed himself to drink too much if he had not thought it prudent to stop, for it seemed to him that he was only drinking water. As soon as he reached a warmer climate, and had plenty to eat, he no longer took brandy, which he drank only when rations ran short. There is a good deal in the book as to the difficulties and dangers of surgery in the field, and Lagneau, who was a shrewd observer, makes interesting remarks on many military personages with whom he was brought in contact. His experience may be compared with that of Baron Percy, who also kept a daily journal on campaign, which formed the subject of an article published in the JOURNAL of January 7th, 1905, p. 37.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

THE annual Ophthalmological Congress held in Oxford on Thursday and Friday, July 17th and 18th, was attended by about seventy members. Amongst the distinguished foreign ophthalmic surgeons present were Professor Emil de Grósz of Budapest, Dr. Igersheimer of Halle, Dr. Franz Deutchsmann of Hamburg, and Dr. Marvas of Paris. There was also a large number of American surgeons present, including Dr. Weeks and Dr. Marple of New York, and Drs. John McReynolds, Howard Hansell, Hulen, Begle, Ray, and W. H. Adams. Canada was represented by Dr. Reeve of Toronto and Dr. Kerry of Montreal. On the Thursday morning addresses were given by Professor de Grósz, Dr. McReynolds, Dr. Igersheimer, and Colonel Elliot of Madras. The Scientific Museum contained numerous interesting exhibits, notably Deutchsmann's macroscopic and microscopic preparations illustrative of the transmission of sympathetic ophthalmia, Dr. Thomson Henderson's microscopical preparations, and Mr. Head's paintings of the eyes of animals. After luncheon cases were shown at the Eye Hospital by Messrs. Zorab, Harriss, Jones, Ridley, and Adams, and several surgeons described details of certain operations there practised. Tea was served at the Eye Hospital, and at night the official dinner was held in Keble College, with Professor Sir William Osler in the chair. On Friday addresses were given in the morning by Drs. Marvas, Deutchsmann, Ridley, Harrison Butler, and Edridge-Green. In the afternoon an interesting discussion on the present position of ophthalmology was opened by Mr. R. W. Doyne, Master of the Congress. Tea took place in the gardens of Worcester College, Lady Bradshaw acting as hostess. After dinner a smoking concert was held in the Junior Common Room at Keble College, bringing to a conclusion what was probably the most interesting and most successful Congress yet held.

INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

As has already been announced, the sixth congress of the International Association of the Medical Press will take place in London on Tuesday, August 5th, the day preceding the opening of the International Congress of Medicine. The Congress of the Press will be held in the Senate Room of the University of London (Imperial Institute, South Kensington), under the presidency of Professor Lucas-Championnière, member of the Institute of France, and President of the Association. The morning meeting will be held at 11 o'clock, when Dr. Squire Sprigge, president of the British Section, will welcome the international guests. Professor Lucas-Championnière having given his presidential address, the Secretary General of the International Association, Dr. R. Blondel, of Paris, will report on the proceedings of the Association since its last meeting. The first discussion will be upon the question of the international reform of medical terminology, and will be introduced by Dr. Blondel. Professor Posner, editor of the *Berliner klinische Wochenschrift*, will then introduce a debate upon the responsibilities of a medical journal with regard to advertisements. The editor of the *Lancet* has issued invitations to lunch at the Hyde Park Hotel, Knightsbridge, at 12.30 p.m. The discussion will be resumed in the afternoon.

INSURANCE ACT AMENDMENT BILL.

THE Standing Committee of the House of Commons to which the Insurance Act Amendment Bill was referred had not concluded its business before we went to press. We invite the attention of readers to the report of the proceedings of the Committee which will be found in the SUPPLEMENT, and particularly to the concluding portion. As will be seen, the Committee agreed on Wednesday to sit late on Thursday so that the bill as amended could be printed and circulated at the end of this week. The intention of the Government is to pass the bill before the House rises this session, and in view of the compromise arrived at between the political parties in the Standing Committee on Wednesday there seems no doubt that this object will be attained.

THE Home Secretary is about to appoint an additional medical inspector of factories to work under the direction of the senior medical inspector. The salary offered is £500 a year, rising by annual increments of £20 to a maximum of £700. Candidates, who must be between the ages of 25 and 40, should apply before August 15th to the Private Secretary, Home Office, Whitehall, S.W.

FOUR English doctors have recently died of typhus fever in China. The names of the victims are Drs. H. S. Jenkins, Cecil F. Robertson, Egerton H. Hart, and F. Hall. Dr. Jenkins, of the English Baptist Mission, was stationed at Sianfu, Shensi. He was M.D. of London University and a Fellow of the Royal College of Surgeons of England. Dr. Robertson, M.B., B.S.Lond., and F.R.C.S., was also stationed at Sianfu. Dr. Hart was widely known in China, and spent the last eighteen years of his life in charge of the Wuhu General Hospital. Dr. Hall for the past four months had acted as Dean of the Union Medical College of Pekin.

ANNUAL MEETING NOTES.

Of a good many features of the annual meeting at Brighton we gave an account last week. As, however, the JOURNAL went to press while the meeting was still in progress the references were necessarily incomplete. Brief summaries of the work done in each of the sixteen Sections on the first day were given last week, and in the present issue will be found an account of what happened in these Sections on the last two days of the meeting. There was some reason to believe that owing to the holding of the International Congress the scientific work done at Brighton would fall short of the usual standard, but in the event this fear was entirely falsified. There were many prolonged and informing discussions, and the attendance at Sectional meetings was fully up to the average. A detailed account of all that was done in the Section of Medical Sociology, the work of which was very successfully organized by Dr. Rowland Fothergill, appears in this issue; while in the SUPPLEMENT, together with other matter, will be found an account of the speeches delivered at the annual dinner and of the Conference of representatives of Local Medical Committees. The Pathological Museum and the Annual Exhibition, both of which were the subjects of notes last week, will be described in full in a later issue.

The Aftermath.

The general impression left by the Brighton meeting is one of indisputable and brilliant success. Bringing to bear not only goodwill but a remarkable amount of organizing ability, the members of the local executive annihilated all difficulties and developed all natural advantages to the full. In their work they had the assistance of a very large number of lay residents, with the Mayors of Brighton and Hove at their head, while there can be very few medical men in the area to whom the Association does not owe its thanks. Probably even Dr. Ainslie Hollis, the chairman of the General Committee of Management, does not really know to whom, of all those enlisted in its service, special thanks are due, and it would be futile for any one else to attempt to distribute credit. Dr. L. A. Parry, in the performance of the multiple duties of a general local secretary, not only achieved success but won many friends through his unfailing courtesy and tact. Dr. Stanhope Eves, who, as we mentioned last week, was the secretary of the Excursions Committee, played a very active part in conducting them to a successful issue. Dr. Geoffrey Bate, whose special field of operation was general entertainments, including cricket and fireworks, Dr. S. Bradley Figgis, who made the arrangements connected with the annual dinner, Drs. Charles H. Benham and Arthur M. Collcutt, who were responsible for the reception given by the Division on Friday, and Dr. Walter Broadbent and Dr. Mantell Daldy all contributed to the amenities of the meeting; and it was quite in keeping with the nominal duty of Dr. Ernest Burchell—that of secretary to the Printing and Publishing Committee—that he should play the part of a walking encyclopaedia, always to be found and ever ready to help in the solution of difficulties.

Arundel Castle.

There are many historic houses in Great Britain, as also a large number of more or less ruined castles, but of castles still in the occupation of the families which originally owned them, and still presenting much the same appearance as they did hundreds of years ago, there are very few. One of them is Arundel, which dominates the small town of that name about twenty miles from Brighton. A large party drove over there in motor coaches on Saturday afternoon, and, after being very courteously received by the mayor at the ancient corporation building, was accorded an opportunity of visiting the beautiful interior of Arundel Castle itself. Its occupation by the same family has scarcely been interrupted during several centuries; and, as much labour has been spent on its upkeep, it affords perhaps a better conception of the appearance and arrangement of a great castle in early days than almost any other building in the United Kingdom. Apart from the interest lent to the visit by this fact its owner, the fifteenth Duke of Norfolk, Earl Marshal of England, occupies a special place in the public esteem as the lay head of the Catholic community in the United Kingdom, and as a peer who, in addition to affording much other evidence of public spirit, went out to South Africa during the war at the head of a troop of yeomanry. It is very rarely that the doors of the inner castle are thrown open to other than private friends of the family, and on the present occasion his Grace, accompanied by the Duchess and her children, paid the Association the marked honour of receiving its representatives in person, and helping to dispense the material hospitality provided in the dining hall. In addition, when the visit (which lasted over two hours) was over, he came out into the grounds to say good-bye to each of the party separately. The FitzAlan Chapel, which lies between the inner and outer walls of the chapel, was also thrown open to inspection, and a band was playing under the trees near by.

Eastbourne.

Early in the week it was foreseen that the opportunity of comparing Eastbourne and Brighton afforded by one of the excursions projected for Saturday was going to prove an extremely popular event, and in the end resort to the ballot became necessary. About a hundred tickets were available, and those whose names emerged found ample reason before Saturday was over to congratulate themselves on their good fortune. From the moment of their arrival at Brighton Station until their return thereto late in the evening they were the guests of the Mayor (Alderman C. W. Bolton) and Corporation of Eastbourne and of the members of that Division of the Association. The special train which conveyed the guests to Eastbourne arrived there soon after 10.30 a.m., and two hours were then devoted to exploring under the guidance of various members of the Organizing Committee, including Drs. Muir-Smith and Merry, the town and promenades. Shortly before one o'clock the guests reassembled at the Town Hall, where they were received by the Mayor and enjoyed an excellent luncheon. A few speeches followed, one being the proposal of a toast to the British Medical Association by the Mayor himself, who paid a high tribute to the medical profession and said that he was proud to belong to a medical family. While extending a hearty welcome to all, Eastbourne felt specially honoured by the presence that day of the President of the British Medical Association, Dr. Ainslie Hollis; of the Chairman of its Council, Dr. J. A. Macdonald; and of its Medical Secretary, Dr. Alfred Cox. The toast was acknowledged by Dr. Ainslie Hollis, who ventured to predict that Eastbourne would one day be the head quarters of the Association at an annual meeting. Then followed a toast to the Mayor and Corporation, which was happily proposed by Dr. L. A. Parry, and acknowledged by Alderman Dr. C. O'Brien Harding, who, in the course of his remarks, made reference to the value placed by the corporation on the services of its medical officer of health, Dr. W. G. Willoughby, and of his assistant, Dr. Muriel Bywaters. The afternoon was taken up by an expedition in carriages to Hampden Park and Beachy Head, where tea was served, and on getting back to Eastbourne the guests found a further round of enjoyment awaiting them. After a sumptuous dinner had been served in the great hall at Devonshire Park—which was made available by the courtesy of Mr. Roland Burke and Mr. E. A. Brown—

the Chairman of the Eastbourne Division, Dr. Harper, proposed a toast to the Association, and, while doing so, humorously built up a theory to the effect that they were dining in what was necessarily the queen of all watering places, because Sussex was the pick of English counties and Eastbourne the pick of Sussex towns. In the middle of his speech the electric light suddenly failed, but Dr. Harper, in no way daunted, completed his remarks in the dark. It may be recalled that a similar incident occurred at the conversazione in the Bute Hall during the annual meeting at Glasgow in 1897, and again at the conversazione in the Hancock Museum at the Newcastle meeting a few years later. On those occasions the accident was more serious, since the light could not be restored, while at Eastbourne after a few minutes' darkness the room was once more ablaze. Dr. J. Macdonald (who rose to reply on behalf of the Association amid continued applause) made amusing use of this incident, and then spoke in glowing terms of the services for which the Association was indebted to the Representative of the Eastbourne Division, Dr. J. H. Ewart—an allusion which elicited an outburst of appreciative recognition. The toast list also included one to the ladies, which was proposed by Dr. Ewart in a brief speech, characterized by his customary and very happy sincerity of manner, and shortly after this the party adjourned to the grounds. These were beautifully illuminated, and the proceedings finally terminated with a brilliant display of fireworks. Shortly before 10.30 the signal for departure was given, and another special train conveyed away representatives of the Association, who, despite the absence of either a chairman or of standing orders, were all of one mind, this being the equivalent of a vote to the effect that they were extremely grateful towards all those who had assisted in the perfect organization of an expedition which had proved one of the most enjoyable ever provided at annual meetings.

PORTSMOUTH.

SATURDAY'S expedition to Portsmouth was a great success, the medical practitioners in the chief naval port of the empire, in common with its municipal authorities and the heads of the senior service, proving untiring in their efforts to make the day interesting. Immediately on arrival the visitors made a bee-line for the old *Victory* in Portsmouth harbour, where they were shown the operating table formerly used in the cockpit, and received a vivid account of ship-board surgery at a time when tar was commonly used to stop bleeding. Then came a tour through the dockyard by permission of Sir Hedworth Meux, after which, as guests of the Portsmouth Division, the visitors assembled at luncheon in the town hall, whose banqueting chamber had kindly been placed at the Division's disposal by the Mayor. About 150 sat down under the chairmanship of Mr. C. P. Childe, who subsequently expressed a cordial welcome on behalf of the Division. This welcome was also endorsed by the Mayor and by Fleet-Surgeon Maitland, a suitable response being made by Dr. C. Peacocke of Dublin, and by Dr. G. Jackson of Plymouth. The welcome and hospitality was also acknowledged by Dr. E. Snell, cicerone of the party from Brighton, who said that it was by the co-operation of neighbouring Divisions that the week's work at Brighton had proved so successful. In the afternoon the party split up into three divisions, some members being conveyed by private motor-cars to Whale Island, and others going in steam launches either to Haslar or to H.M.S. *Vernon*. Those electing to go to Haslar had an interesting glimpse of the organization of a great naval hospital. Under the personal guidance of the surgeon-general, the wards, the *x*-ray and other departments, the laundry and power-house, the museum (in the possession of which, we believe, Haslar stands alone among naval hospitals), and the theatre (for dramatic performances, not operations), were all duly inspected, and afterwards the visitors strolled in the pleasant grounds, forty-eight acres in extent, which surround what is not only a hospital, but a colony. The return journey, as far as most members were concerned, was made by way of Southsea, where the guests were served with tea on the lawn of the Queen's Hotel. The local executive, however, had also very thoughtfully made arrangements by which those who wished could return to London direct, leaving almost at the same hour as the rest of the party.

LEWES.

ONE of the pleasantest memories of the week is furnished by an expedition to Lewes, which took place on Friday. A cleanly, healthy-feeling town, lying near one of the lower crests of the many earth waves presented by the South Downs, it enjoys the advantage of being ruled by men who show a respect for the past, such as, in this Vandal age, is distinctly attractive. Thanks to this fact, what now remains of historic Lewes is not only carefully preserved, but has been very thoroughly studied and was seen to the best advantage under the guidance of Dr. Hugh Stott, the Mayor of this county town, and of some of his officers, two of whom supplied a short description of the corporation regalia while the party was refreshing itself in the town hall on first arrival. The afternoon included a visit to the castle, under the shadow of which Mr. Frankfort Moore, the novelist, has built himself a home of exceptional beauty. A virtuoso of catholic taste and with a true collector's *flair* for what is really beautiful as distinct from merely antique, he has brought together enough china, glass, and armour to occupy many days' study, and has arranged a good deal of ancient carving in such fashion that only the cognoscenti would detect that the panelling of the rooms was composite. Equally clever is the arrangement of the grounds, which, suggesting several schools of gardening, yet manages to combine their leading features harmoniously. While tea was served in the billiard room, Dr. Walter Broadbent expressed the thanks of the visitors, and thus drew from Mr. Frankfort Moore a courteous little speech presenting the happy phrasing which would naturally be anticipated from this gifted writer.

TUNBRIDGE WELLS, WORTHING, AND CHICHESTER.

TUNBRIDGE WELLS, Worthing, and Chichester were among the places which gracefully offered hospitality to members of the Association during the week of the meeting, all three expeditions taking place on the same day—namely, Saturday. Tunbridge Wells lies somewhat far afield so far as Brighton is concerned, so the party went there by train, being met on arrival by Dr. C. R. Watson, Dr. Francis Riley, and other members of the Division which kindly arranged the visit. Luncheon at the Wellington Hotel followed, the visitors being the guests of the Tunbridge Wells Division, and shortly afterwards a number of motor cars arrived and took the party for a long drive, during which they were able to see something of the beauties of Tunbridge Wells itself and also of Penshurst Place, whose owner, Lord De L'Isle and Dudley, had obligingly thrown it open for inspection. On getting back to Tunbridge Wells between four and five after a very pleasant outing the whole party attended a reception at the Town Hall, where they were entertained at tea by the Mayor, and the opportunity was taken by Mr. Verrall for acknowledging the obligations of the Association to the town, and especially of those members who had been able to enjoy the hospitality both of the Mayor and of the Division.

Worthing, whose claim to equability of climate is supported by its repute as a flower and fruit producing centre, is easily reached from Brighton, so the members who had opted for this expedition—which was arranged by Dr. Mortor

Palmer—did not have to start until nearly midday. The first event was a pleasant luncheon party, with the medical profession of Worthing as hosts. This was followed by a few toasts, the first being one to the visitors, which was neatly proposed by Dr. Ayton Gostling, who was in the chair, and as happily acknowledged on the part of the guests by Dr. Thomas Neill of Dublin and Dr. Vernon Dodd of Folkestone. A further toast was to the Mayor of Worthing, this being proposed by Dr. F. Hinds of Worthing, and suitably acknowledged. The toast list ended, the party went for a long drive, which enabled them to see two famous old churches, Broadwater and Sompting, and also Cissbury Hill. At the latter a further halt was made, during which some of the members climbed to the top and were rewarded by a splendid view. The day ended with a garden party given by the Mayor, the visitors getting back to Brighton just before dinner time.

The party for Chichester started from the Pavilion shortly before 10 o'clock, and arrived at Chichester after a very pretty drive which lasted some two hours. In the course of the day they managed to obtain a good idea of the many attractions Chichester offers to the archaeologically-minded. The first hour after arrival, however, was occupied by a visit to some preserved meat works, whose owners, Messrs. Shippam, after the party had had a glimpse at the ruins of a Franciscan monastery, very kindly entertained the party at luncheon. This took place in the lecture hall of Chichester's Museum, and was followed by an interchange of compliments between the visitors and residents, the speakers including Dr. Stanhope Eves, who represented the Brighton executive, Dr. R. F. Jones, of British New Guinea, and Professor Potts, of Omaha, U.S.A. Next came a walk round Chichester, which embraced an exploration of the Cathedral, where the visitors were met by Dean Hannah, and had the various features of special architectural interest which this building presents explained to them by Prebendary Bennett. The custos of St. Mary's Hospital also very kindly showed them over this interesting habitation, one of those ancient guest houses for the reception of all and sundry from which modern institutions for the reception of the sick obtain their name. It is still used practically for its original purpose, though its guests are now permanent residents. Before the members of the party commenced their homeward journey they were kindly entertained at tea by the Mayor and Mayoress, Councillor and Mrs. Garland.

Boulogne.

By way of leaving none of Brighton's facilities unused, the Executive on Saturday afforded an opportunity to as many bold spirits as pleased to cruise over to Boulogne. When the morning broke a fairly strong north-east breeze was blowing, and this reduced the number of prospective voyagers to about twenty. The courage of these was rewarded, however, by an absolutely smooth passage both going and returning, and, thanks to this circumstance, the day proved thoroughly enjoyable. On their arrival the visitors were welcomed on the quay by Dr. J. A. Philip, who for some years has been established in Boulogne, and by Mrs. Philip, and under their kindly guidance repaired to the town hall, where they received a further welcome from *M. le Maire-adjoint* (Monsieur Haffriengue) and from a number of French medical men. These included Dr. Henri Gros, Dr. Fourmantin, and Dr. Blanchetière, who fills a position in Boulogne resembling that of a medical officer of health in this country. The ceremony included the emptying of sundry glasses of champagne coupled with the expression of appropriate sentiments, these being voiced on the part of the visitors by Dr. Mondelet of Hove, who spoke much as follows: "Permettez-moi de vous exprimer le plaisir que j'éprouve, et l'honneur que je sens, d'avoir été choisi par mes confrères, membres de l'Association Médicale Britannique qui célèbrent le quatre-vingt-unième anniversaire de son existence, pour vous adresser, à l'occasion de nôtre visite à votre charmante et si bien connue ville de Boulogne. Inutile pour moi, cher monsieur, de vous dire qu'une occasion comme celle-ci devra, et doit de nécessité, augmenter et intensifier 'l'Entente Cordiale' qui existe déja entre deux grands pays comme la France et l'Angleterre, qui ne sont séparés que par la courte espace d'eau que nous avons traversé ce matin. Je suis certain que j'interpréte les sentiments de mes confrères quand je vous remercie sincèrement et infiniment pour votre politesse et votre aimable réception —réception qui nous a procuré l'occasion et l'avantage de visiter en détail, tous les endroits et objets d'intérêt de votre belle ville. En vous disant adieu, nous répétons nos remerciments pour la réception que vous nous avez accordé, et nous vous souhaitons à vous personellement, Monsieur le Maire et à tout Boulogne, tout succès, et toute prosperité." Subsequently the party visited the principal buildings of Boulogne, and re-embarking shortly before 6 p.m., got back to Brighton about 10 o'clock.

The Ladies' Committee.

At annual meetings arrangements are always made to fill in the morning hours for the welcome contingent of ladies who arrive in company with husbands, brothers, or fathers, but have neither title nor inclination to attend the sectional meetings. In Brighton this problem was solved with exceptional success. Apart from arrangements for tennis and for golf, visits to various places of interest in the town, such as the Municipal Training School for prospective housewives, were arranged, and there arrived each morning at the Pavilion a number of private and other motor cars ready to take the ladies for drives in the neighbouring country. Furthermore, tea was served in the ladies' drawing-room on several afternoons of the week, and throughout the day a number of lady stewards were in attendance. In short, the Chairman of the Ladies' Committee, Mrs. R. F. Jowers, and its very active Secretary, Miss Hollis, together with its other members, are to be congratulated, not only on having organized their work on sound lines, but on having taken care that everything it was proposed to do should actually be done.

Flying.

Lancing and Shoreham were both among the places explored during the week, a joint and very large party visiting them in motor cars on Friday. Arrived at Shoreham, one division went off to visit Bungalow Town. This is the name applied to a mile-long line of houses erected within a few yards of the sea, on a bank of shingle lying a considerable distance from the true shore. Originally the "town" consisted of a collection of dwellings improvised out of old railway carriages and the like, but is now an array of more or less picturesque cottages, which, though designed chiefly for lovers of open air, are quite comfortable dwellings. Several of them were obligingly thrown open to inspection by their owners, and Dr. C. Rawdon Wood, medical officer of health for Shoreham, who accompanied the party, testified to their healthiness. Subsequently the party took tea as the guests of the Shoreham and Lancing Land Company. The other division went off to Lancing College, a beautifully-situated public school for 300 boys. Here they were entertained by the head master, the Rev. H. T. Bowlby, and visited the various buildings, which include a remarkably fine chapel built in Gothic style. One of the members of this party was Dr. Rayner, who expressed the thanks of the guests for the hospitality received. Later on the two divisions reunited at Shoreham to witness an aëroplane display in the aviation grounds. The flyers were Monsieur Brégi, with a Brequet passenger biplane, and Mr. Eric Pashley, who, using a Henri Farman biplane,

startled every one by the rapidity and multiplicity of his movements. It was open to any visitor who pleased to take a flight as a passenger, and the notices relating to this matter which were posted at the Pavilion thoughtfully stated that the fee of one guinea charged was a return fare. Details were not, however, supplied as to the exact fashion in which passengers would return to earth, and possibly for this reason none of the party seemed disposed to dispute the saying that lookers-on see most of the game. Nevertheless, Monsieur Brégi did not go up passengerless, since a lady, Mrs. Buller—herself an experienced flyer—accompanied him.

Municipal Institutions.

The staffs of several hospitals in Brighton, including the Lady Chichester Hospital, which is officered entirely by medical women, were "at home" on one or other day of the week; and under the guidance of the medical officer of health, Dr. Duncan Forbes, a considerable number of members took advantage of the arrangements made by the health and some other committees of the corporation for the inspection of the institutions under their control. The places visited included the abattoir, where a practical demonstration of the up-to date methods employed was given, the school clinic where the Society of School Medical Officers was holding its summer meeting, the sanatorium which was established mainly as an educational institution some seven or eight years ago by Dr. Arthur Newsholme, now Medical Officer to the Local Government Board, who was among the visitors; the laboratory where the milk supply of Brighton is controlled, and a new elementary school which has recently been built on somewhat elaborate lines, and includes baths and glass-covered verandahs. In reference to this school, Dr. Duncan Forbes mentioned that the rules relating to the baths included the provision of a clean towel for each child every time that it took a bath. The Chairmen of the committees and subcommittees concerned accompanied the parties, and refreshments were provided.

Garden Parties.

Several garden parties took place during the week, the first of these being given by Mr. L. T. Thring at Wick School. The boys being fortunately still in residence, the visitors, among other pastimes, witnessed a cricket match between the Wickonians and a rival school, and received fresh evidence of the eternal fitness of things, through the home team rapidly putting together over 200 runs, and then declaring the innings closed. The second took place in some large well-wooded gardens surrounding a chalybeate spring which, under the name of St. Ann's well, formerly enjoyed considerable repute. They lie within the boundary of Hove, and Alderman and Mrs. Barnett Marks, the mayor and mayoress, had the pleasure of seeing their hospitality enjoyed by many hundred guests. The third and fourth entertainment of the same order were both given on Friday, one by Dr. and Mrs. Meyrick Holmes at Sylvan Hall, the other by the Misses Lawrence at Roedean. Sylvan Hall, which is used as a residence for patients, has charming grounds, and these were explored to the strains of an excellent band. It is situated on the Lewes Road, within easy reach of the centre of the town, but Roedean is some little distance from Brighton. The name represents a girls' boarding school, which, in respect of the size of its buildings, their equipment and the number of pupils, outvies many of our great public schools for boys. Having a host of youthful talent at their command, the Misses Lawrence had no difficulty in providing ample amusements for their guests, the entertainment including music, a short Latin comedy entitled *Medicus*, a cricket match, and an ambulance display.

A Masonic Greeting.

A week or two before the Annual Meeting commenced we announced that the Master, Wardens, and Brethren of the Hova Ecclesia Lodge had in view the holding of a special lodge for the purpose of greeting those members of the Association who are Masons. This greeting was duly accorded on Wednesday, and, apart from constituting, to the best of our belief, a new departure in the history of annual meetings, included the delivery by the Worshipful Master, the Rev. W. R. Dawson, of a short speech which describes the attitude of Masons towards the medical profession and one another so happily that we reproduce the greater part of it. After a few initial remarks, the Worshipful Master said: Believe me, brethren, this greeting to you from our lodge is no mere formality. During the next few days you will learn—did you not know it already—that Brighton and its inhabitants love to pay homage to those of your profession. You will be fêted, honoured, welcomed, wherever you go. But no greeting will be more sincere, no welcome will sound a deeper, truer note than that welcome which you receive now. For the link that binds you to us is no ordinary one—it is not a bond to be lightly talked of—to be carelessly thrust aside as a thing of naught—it is a link in a chain forged back in the days of our great Founder: it is strong, it is sure, it is firm, it is true. In a very real sense you are our brethren. To us and to you masonry means something. It stands for much in our lives. It represents much of what time has proved good. Little wonder, then, that our greeting to you is a hearty one. For we of this Lodge realize—as all true Masons must realize—that no profession has higher aims or nobler ambitions than that profession to which you have the honour to belong. By self-sacrifice, by devotion to duty, and by sympathy has the great reputation of your profession been built up. And these are virtues not unknown, not unshared, among Masons. For the life which is foreshadowed for us as Masons is the life of charity—a charity interpreted in its broadest sense, a charity based on the virtues characteristic of your profession, not a narrowing charity which pauperizes and destroys self-respect—the charity we, all of us, right through our lives crave for—a charity which means good fellowship and sympathy—a charity which uplifts, elevates, and inspires. And here, as laymen, we stand on common ground with our brethren of the medical profession, for it is round this charity that all your work centres. In your work we respect you, for your ability we honour you, for your sympathy from our hearts we greet you, as brethren we have been proud to have you here. In the days to come it will be a memory which we shall like to dwell upon. For a few brief moments you have come into this Lodge to sympathize with us in our work here, to receive our welcome, and once more to have the seal of approval set on your life's work by the Great Architect of the Universe. May He reward you for your self-sacrifice, may He bless you in all your undertakings. Brethren, on behalf of the Hova Ecclesia Lodge we greet you.

Dancing and Plays.

Hove Town Hall during the week of the meeting saw many sights, the last of all being a brilliant reception on Friday night. This was given by the President and Executive Committee of the Brighton and Hove Division, and was attended by so many members in academic robes as to constitute a cinematographic illustration of the long article which we published just before the Annual Meeting in 1910 in regard to academic dress. The guests were received by Dr. and Mrs. Hollis in the great hall, wherein excellent vocal and instrumental music was subsequently in progress throughout the evening. The council chamber and two or three others were arranged as supper rooms, and

twice during the evening the banqueting hall was thronged by those anxious to witness the performance of two plays, entitled *The Doctors* and *The Fatal Gift*. Both were produced by their author, Mr. Frankfort Moore, and both proved highly interesting. The second name is based on one of Mr. Moore's novels bearing the same title. Equally successful was the reception given by the Mayor and Mayoress of Brighton earlier in the week at the Pavilion, to which brief allusion was made in our last issue. There is probably no building in the kingdom which lends itself to entertainments of this order so well as the Dome and the Pavilion when united as they were on this occasion by a covered way, and things went with a swing from beginning to end. Apart from its attractiveness in other respects, this reception was interesting as the scene of a somewhat novel experiment. At several previous meetings there has been a little dancing, but the question of whether terpsichorean exercise appeals to attendants at annual meetings had not until this year been put to a full test. At the Pavilion three of the large rooms possess excellent floors, and each of them was provided with an equally excellent band. Furthermore the hosts of the evening, Mr. and Mrs. C. Thomas-Stanford, had established controls in the shape of two concerts in the Dome, together with ample provision for card playing, the net outcome of the lavishness of the arrangements being to convert the evening into a thoroughly scientific investigation of the problem in question. Despite their great size, the dancing-rooms were so crowded from about nine o'clock till half-past one as to make it clear that the human instinct towards dancing in moments of gaiety is not extinguished by learning, and not more than slightly diminished even by age.

Golf, Tennis, and Cricket.

One of the events on Saturday was a cricket match at Brighton College, got up by Dr. Geoffrey Bate, during which the boys thoughtfully took care that visitors should conclude their week by ample exercise. Winning the toss, they remained in until tea-time, when, having made a huge number of runs, they declared their innings closed, subsequently dismissing the visitors for about a hundred. Golf was in progress during the whole week, thanks to the owners of various golf clubs in the neighbourhood, and especially of the East Brighton Club, whose genial secretary, Mr. Montagu Toller, among other good-natured acts, undertook the supervision of this year's competition for the Ulster Cup. For this there were over sixty entries, play taking place on a sunshiny day when there was just sufficient breeze blowing to demand consideration. More than one previous winner was among the competitors, and Mr. Albert Lucas of Birmingham very nearly annexed the cup for good. In the event, however, the winner this year proved to be Dr. H. L. Hatch of Pinner, who was 1 up on bogey with a handicap of 15. For the second place there were five ties—R. A. Clapham (Brighton) and G. Steele-Perkins (London), each with a handicap of 2; T. Sansome (West Bromwich) with a handicap of 3, Albert Lucas (Birmingham) with a handicap of 7, and C. T. Hunter (Newcastle) with a handicap of 18. These five players were all square, three others being 1 down, three 2 down, and seven 3 down. The handicapping therefore worked out very efficiently. The winner, who played rather late, was partnered with Mr. Hey Groves of Bristol. The other competitors included Dr. Haslip (London), and Mr. D. F. Todd (Sunderland), who have proved victors on previous occasions. There was also an optional sweepstake of 2s. 6d., thirty-six members fancying their chance sufficiently to join therein. Among them was the winner of the cup, who took two-thirds of the pool, the rest being divided among the five who tied for second place. The arrangements so far as male players were concerned were in the hands of Dr. Stanhope Eves, while Mrs. Sansome provided for the needs of lady golfers. These likewise worked out successfully, and included a competition for a prize presented by Mrs. Barnett Marks of Hove. Nor were tennis players forgotten, the arrangements for their comfort, which covered the provision of luncheon, being made by Mrs. Hobhouse.

On the Sunday preceding the meeting the National Temperance Association made successful arrangements for the deliverance of addresses on the subject of temperance by various medical men at towns in the neighbourhood of Brighton, and on the following Thursday once more gave the breakfast which has long since become an established feature of annual meetings. The proceedings on this occasion included an address from Mrs. Scharlieb, of which some account may subsequently be furnished. The Irish Medical Schools' and Graduates' Association was likewise one of the bodies which seized the opportunity for holding a meeting; it included a luncheon party, at which a very large number of guests were present.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

Mental Deficiency Bill (Scotland).

At the sitting of the Committee on July 23rd, further progress was made, and at the end of the sitting Clause 49 had been added to the bill.

Clauses 30, 32, and 50 were postponed, and Clause 45 was disagreed to.

The only important amendment, from the professional point of view, made in the intervening clauses was one in Clause 34, enabling officers employed in institutions under an order to be admitted as pensionable for the purposes of the Asylums Officers' Superannuation Act, 1909.

On Thursday, July 24th, Clauses 51 to 57 were agreed to, except that Clause 54, which relates to pauper lunatics, was withdrawn. Later on also Clause 50, which relates to the protection of female defectives, was disagreed to, a new and more detailed clause being substituted on the motion of Mr. McKinnon Wood.

A further clause, also dealing with religious questions, was brought up by Mr. McKinnon Wood and added to the bill. The other clauses of the bill, with the exception of various amendments relating to assessment questions, were passed without material amendment, and the whole bill and the schedule finally passed through Committee to be reported to the House.

A new clause relating to the asylums officers' superannuation is of sufficient professional interest to be quoted in full:

1. For the purpose of reckoning the length of service of an established officer or servant in an asylum in Scotland to which the Asylums Officers' Superannuation Act, 1909, applies any time previously served by him in a parochial asylum or in the lunatic ward of a poorhouse shall be treated as if it had been served in a district asylum.

2. The contribution which, under Section 12 of the last-mentioned Act as applying to Scotland, is required to be made by the district board of an asylum from which an established officer or servant has removed shall, where that asylum was a parochial asylum or the lunatic ward of a poorhouse, be made out of the poor rate by the parish council by which that asylum was maintained.

Mental Deficiency Bill (Ireland).

Mr. Watt asked the Chief Secretary for Ireland whether he proposed to introduce a Mental Deficiency Bill for Ireland; and, if not, why this exception was made, in view of the fact, stated by the Royal Commission on the Care and Control of the Feeble-minded, that 66 per cent. of the 25,415 mentally defectives in Ireland, outside of asylums, were in need of immediate provision being made for them, whereas in England and Wales the percentage was 44, and

in Scotland 35. Mr. Birrell said that it would be impossible to introduce a Mental Deficiency Bill for Ireland during the present session.

Public Health (Prevention and Treatment of Disease) Bill.

This bill was read a second time on Wednesday, July 23rd. Dr. Addison raised a question as to the position of the Metropolitan Asylums Board which Clause 4 of the bill proposes to constitute a sanitary authority for the purpose of the institutional treatment of disease. He objected to any powers being given to the Board which would take away from the County Council any of its powers and responsibility in connexion with the provision of treatment for tuberculosis and other diseases. In reply Mr. Burns said that there was no intention under the bill of devolving upon the Metropolitan Asylums Board any of the public health duties and functions now exercised either by the borough councils or by the County Council. A further statement was made by Mr. Burns, the effect of which apparently is that he proposes to delete the powers to provide laboratories given to county councils under Clause 3 of the bill.

Considerable opposition has arisen in the House to the proposals in their present form in respect to the Metropolitan Asylums Board. It is possible, however, that should the bill meet with material difficulties in Committee and not obtain sufficient time, its purposes may be obtained by the amendments of which notice has been given to the National Insurance Act Amendment Bill in respect of increasing the powers of county councils in connexion with the treatment of disease. It is rumoured in the House that the deletion of the words relating to laboratory facilities was granted in order to meet the opposition of some of those members of the House who have been disappointed at the recent proceedings on the Dogs Bill. An amendment, however, has been placed on the paper by Mr. Astor and Dr. Addison to insert the words "diagnosis and" before "treatment," so as to enable county councils to make proper provision for the diagnosis as well as for treatment of disease. It is difficult indeed to understand how proper treatment could be carried out unless proper means were available for making a diagnosis, but in view of the deletion of the words respecting laboratories, it would appear that the members concerned wish to have the point definitely stated.

Education (Scotland) Bill.

This bill as reported from Standing Committee was considered in the House on Thursday, July 24th. Clause 3, which relates to the duties of school boards in respect of the medical treatment of school children, was under consideration. The bill did not come on till after eleven o'clock, and, in view of the lateness of the hour, after a short discussion, the debate was adjourned.

Highlands and Islands (Medical Service) Bill.

This bill was read a second time on Thursday, July 24th, and was sent to Standing Committee. No opposition was offered to the bill.

The bill provides that there shall be paid out of money provided by Parliament annually the sum of £42,000, to be called the Highlands and Islands (Medical Service) Grant, which shall be administered and applied by a board, called the Highlands and Islands (Medical Service) Board, appointed under the Act in accordance with schemes prepared and approved by the Secretary for Scotland with the consent of the Treasury for the purpose of improving medical service in the Highlands and Islands of Scotland and otherwise providing and improving means for the prevention, treatment, and alleviation of illness and suffering therein.

The second clause relates to the appointment of the board. It is to consist of not less than five and not more than nine members appointed by the Crown, one of whom shall be appointed as chairman. The board may act by any four, or, if the total number is six or less, by any three of their number. The Secretary for Scotland may appoint a secretary to the board, and, with the consent of the Treasury, appoint and employ such officers and servants as may be necessary, and may remove them if required. The salaries of the secretary and officers and other costs are to be defrayed out of moneys provided by Parliament.

Under Clause 3 provision is made as to the placing of moneys at the disposal of local authorities, insurance committees, and other bodies. Houses may be built for practitioners or nurses on land acquired for the purpose.

Security of tenure of medical officers appointed is provided in accordance with the terms of Section 15 of the Public Health (Scotland) Act, 1897. Provision is made also for the reception and disposal of gifts to the board.

The Highlands and Islands as set out in a schedule consist of the following counties:—Argyll, Caithness, Inverness (excluding the Burgh of Inverness), Ross and Cromarty, Sutherland, Orkney, and Shetland. In addition, the Highlands of Perthshire—that is to say, the Highland District of the county of Perth, and the parishes of Balquhidder, Callander, Comrie, Killin, and Kirkmichael.

In view of the debate which took place in the House, it is very likely that modifications may be introduced into the schedule in Committee.

Medical Prescriptions Bill.—Lord Lamington has introduced in the House of Lords a bill "to restrict the undue use of certain medical prescriptions." The memorandum prefixed to the bill states that its object is to prevent medical prescriptions which contain scheduled poisons from being used as a means of obtaining an undue quantity of the medicine prescribed. At present it is not an uncommon practice for a patient who has received a prescription from his or her doctor to use the prescription again and again without further medical authority. It is obvious that this practice, in some cases at least, leads to abuses. If a doctor sees a patient and prescribes a certain quantity of a certain medicine, it by no means follows that the doctor intends the patient to use that medicine repeatedly or indiscriminately. The bill proposes, therefore, that where a medicine prescribed by a doctor contains a scheduled poison the prescription is not to be dispensed more than once, unless the doctor gives directions either specifying the number of times it may be dispensed and supplied to the patient or stating that it may be supplied to him or her as often or in such quantities as is desired.

London University.—Mr. King asked the President of the Board of Education whether the grants to London University were conditional on any developments and changes in the policy of the university being approved by the Board; and, if so, whether he would give an undertaking that no new site for the buildings of the university should be acquired without parliamentary sanction.—The Parliamentary Secretary of the Board of Education said that the reply to the first part of the question was in the negative; the second part of the question did not, therefore, arise.—Mr. King inquired whether there was any means by which the Board of Education could take cognizance of the proposals for a new site for the London University, and whether it was watching the subject.—Mr. Trevelyan replied that the subject was being watched.

The Government Educational Proposals.—An important statement was made by Mr. Pease on Tuesday, July 22nd, in the course of a speech outlining the Government proposals in respect of education. He said that in future the Board proposed to regard medical inspection and treatment for the purposes of grant as one service, and not as two, and a sum of £50,000 in addition to the £80,000 in aid of medical treatment, which had already been voted this year, was to be placed on the Estimates, so as to enable extra assistance to be given to local authorities undertaking treatment as well as the inspection of school children. The grant was to be distributed under conditions provided under regulations by the Board of Education. These regulations he promised would be circulated almost at once. Much greater attention is to be given to the physical training of young children, instruction in habits of health, provision of baths, provision of special schools, and to other matters of a similar nature. It was also proposed next year to enable local

authorities to extend the provision of meals to the holidays. Mr. Pease incidentally mentioned that the school medical service now contained nearly 1,000 medical officers and over 700 nurses. The proposals of the Government with respect to additional attention and assistance being given to the health of children in our schools received hearty support from all sides of the House.

Prison Hospital Nursing Staff.—The Home Secretary has informed Mr. Douglas Hall that it was hoped to make readjustments in the terms of service of the nursing staffs in prisons which would be satisfactory to the officers concerned.

Metropolitan Asylums Board—Sanatoriums.—In reply to Mr. Astor, Mr. Burns said that the institutions belonging to the Metropolitan Asylums Board which were at present used for the purpose of sanatorium benefit were the Downs Sanatorium at Sutton, and a part of the Northern Hospital, Winchmore Hill; the former had 372 beds, of which 296 were in use on July 21st; the latter had 200, of which 171 were then occupied. The area of the site of the Downs Sanatorium, excluding that covered by buildings, was 17½ acres; at Winchmore Hill the airing courts and exercise fields at present available for the patients amounted to 8¾ acres, but there were nearly 36 acres attached to the whole hospital.

Vivisection Experiments (Return).—Mr. George Greenwood asked the Home Secretary if there was any special reason for the delay in the publication of the return of experiments on living animals for last year; and whether, in view of the fact that no proceedings could be taken against a licensee under the Cruelty to Animals Act, 1876, except within six months from the time when the matter of complaint arose, he would see that such return should in future be published at an earlier date.—Mr. McKenna said that there were one or two points connected with this return which had to be considered in connexion with the Report of the Royal Commission, but this had not delayed the publication very much. On July 8th, 1912, he had explained why the ordinary date for the issue of this return could not be accelerated owing to the labour involved; but it was now being printed, and would be in the hands of members shortly.

Isolation of Infectious Tuberculous Cases.—Mr. Astor asked the President of the Local Government Board whether any local authorities, and if so which, had taken steps to secure the compulsory isolation of tuberculous cases which were in a state of high infectivity; and, if so, whether he would state what action had been taken.—Mr. Burns said that in the session of 1911 the Corporation of St. Helens obtained, by means of a local Act, certain special powers in regard to the compulsory isolation of persons suffering from pulmonary tuberculosis. Similar powers were refused in the case of Sheffield in the session of 1912, and in the cases of Derby and Southport in the present session. Similar powers had been obtained in the present session by Liverpool, East Ham, and Bradford. The medical officer of health of St. Helens considered that the powers had proved useful, but he reported that during 1912 in only one case was it necessary to make an application to the court for an order authorizing compulsory removal.

Bovine Tuberculosis.—Mr. Runciman stated, in reply to Mr. Mount, that according to the information supplied to the Board of Agriculture by the local authorities, up to date 1,559 bovine animals had been slaughtered under the Tuberculosis Order, but he was unable to say what number of animals had been otherwise dealt with under the Order. Up to June 24th last 1,747 animals had been notified to the local authorities under the Order, of which 965 had been slaughtered. Claims for contribution to the cost of compensation had been received from only a few authorities, and it was impossible to estimate with any precision how much was due.

Venereal Disease.—Captain Jessel asked the Prime Minister whether his attention had been called to a request from some forty members of the medical profession asking for the appointment of a Royal Commission to investigate the facts concerning venereal diseases, and to recommend what steps, prophylactic and therapeutic, should be taken to cope with those diseases; and whether he proposed to take any action in the matter.—The Prime Minister said that the request was receiving careful consideration.

Glycerinated Calf Lymph.—Mr. Snowden asked the President of the Local Government Board whether in his report for the year 1911–12 Dr. F. R. Blaxall, Bacteriologist for glycerinated calf lymph at the Government lymph establishment, announced that experiments had been made with carbolic acid, chloroform, and oil of cloves in the preparation of lymph; whether Dr. Blaxall stated that there was still much work to be done on the subject and further experiments were in progress; whether this denoted that the glycerinated calf lymph now in use was imperfect; and whether he would consider the advisability of suspending the issuing of lymph from the Government establishment until a satisfactory virus had been obtained.—Mr. Burns said that the answers to the first two parts of the question were in the affirmative. The experiments were not undertaken because the lymph which was now issued from the Government lymph establishment was imperfect, but for the purpose of ascertaining whether some more rapid method of preparing the lymph than that which was now adopted might be available.

Tropical Diseases in Live Stock.—The Parliamentary Secretary of the Local Government Board stated, in reply to Mr. Charles Bathurst, that it was proposed to immunize British live stock against redwater and anaplasmosis by inoculation at the Government cattle-testing station at Pirbright prior to exportation abroad. Work would also be carried on at the laboratory with a view to making it possible to immunize against other diseases which militated against the exportation of British pedigree stock.

Preservatives in Foods.—Mr. Burns informed Major White, who asked a question as to the use of boracic acid in potting shrimps, that the question of preservatives in foods was under consideration by the Local Government Board, and he was not at present in a position to say what action would be suggested in the matter.

THE late Mr. R. B. Etherington-Smith, M.B., F.R.C.S., of St. Bartholomew's Hospital, left estate of the gross value of £3,746, of which £2,487 is net personalty.

IT is stated that the Italian Minister of Marine has authorized a medical committee to transform three old warships into sanatoriums for tuberculous children.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, W.C., on July 18th, Dr. J. Brindley James in the chair. The claims showed a decided decrease, and are now falling to their normal summer level. The past six months have been very heavy in this department and the sum of £10,000 has been paid away. The satisfactory feature noted at this meeting was that the new business for June was double that for the same month of the preceding year, and the expansion of this important department is being well maintained during the current month. It was reported that the society's candidate for a foundation scholarship at Epsom College was again successful. The subscription of 100 guineas which the society gives is instrumental in procuring a large number of votes, and these are always given to the son or relative of a deceased member of the society. Since the annual subscription has been given, all the society's candidates have, so far, been elected. This benefit is given, without extra charge, to members or their children and has proved of great value. The subscription of 100 guineas to the Royal Medical Benevolent Fund has also been of assistance to the widows of members in obtaining grants of money when in financial distress. Prospectuses and all further information can be obtained on application to Mr. Bertram Sutton, Secretary, Medical Sickness Society, 33, Chancery Lane, W.C.

England and Wales.

[*From our special correspondents.*]

LONDON.

London County Council.

Observations by the Board of Education on the Medical Treatment of School Children.

An important letter from the Board of Education on the subject of the medical inspection and treatment of London school children was considered by the London County Council on July 29th.

The Board stated that it was glad to learn from the reports of three of its medical officers that, subject to certain qualifications, the actual work of medical inspection was being carried out satisfactorily by an efficient staff of medical officers who seemed to be keenly interested in their work. Further, the organization of the work of inspection as a whole, particularly the arrangement under which the area was divided into four sections, each under the charge of a divisional medical officer responsible for the supervision of the assistant medical officers in his section, appeared to be satisfactory. A suitable examination was now made of all children entering school. With regard to the routine inspection of the children, the Board understood that the weighing and measuring of the children and the testing of vision were as a rule undertaken by the nurses apart from the medical examination, and in some cases on a different occasion, and that this part of the work was not in fact adequately supervised by the medical officers. As regards the testing of vision, the Board considered it very desirable that the medical officer should himself examine all cases reported as the result of the preliminary examination by the nurse to be defective, so that he might be in a position to take full responsibility for all cases referred for further examination and treatment, and to estimate with accuracy any changes in visual power at subsequent examinations. It was doubtful whether sufficient attention was given in all cases to the detection and estimation of defective hearing. The Board approved the systematic arrangements made for the re-examination of cases of defect found in the course of medical inspection, and the system for ascertaining whether treatment was or was not obtained for defects discovered in the course of medical inspection.

In certain respects, however, the existing arrangements in regard to following up did not appear to be altogether satisfactory. Although the greater part of the work undertaken by the after-care organizing staff was concerned with the results of medical inspection and treatment, this work was not, in fact, placed under the direct control of the school medical officer. It was essential, if the work of the Council's school medical service was to be carried on with full efficiency, that the whole of the school medical work, including inspection, following up, and treatment, should be placed under the control of the school medical officer. The Council should make re-arrangements of its staff to effect this; the Board was only prepared to make grants under the medical treatment grant regulations in respect of ancillary undertakings "if carried out by the school medical officer or his staff or under his direction or supervision."

In some further observations, the Board stated that the medical officers should be cognizant of all cases of children absent from school on medical grounds for more than a specified period, with a view to ensuring that the children returned to school as soon as they were fit to do so, and that they did not return too soon to their own detriment or that of other scholars. It was desirable to establish inspection centres to which cases could be referred by the medical officers from routine medical inspection for more detailed examination. Although recent agreements had provided for the use of treatment centres for purposes of inspection, little use had been made of the treatment centres for this purpose. It would appear that the centres had been regarded merely as places where children could be examined at the request of the attendance officer, and not also as centres serving a comparatively small area from which the school medical work might radiate and a continual supervision over individual children, so far as necessary, might be exercised.

With regard to the arrangements for medical treatment, the Board made the following observations:

1. It appears that in certain cases the arrangements made do not secure that the medical officers of the treatment centres are furnished with sufficient information as to the nature of the defects for which the children are referred to the centres.
2. The Board understand that in certain districts the arrangements made in regard to dental treatment, while providing for the inspection by a dentist of children in the 6 to 8 age group, include a considerable proportion of older children selected by medical officers, thus interfering with the normal development of the scheme of dental treatment on preventive lines. This may be a temporary necessity, but should not be regarded as a permanent arrangement.
3. The arrangements with regard to the treatment of minor ailments do not appear to be altogether satisfactory. The Board understand that in practice a large proportion of the children requiring such treatment do not obtain it, partly owing to the insufficient supply of facilities for treatment, and partly owing to the absence of provision for securing the prompt attendance of the children at treatment centres. The Board gather that before a child can be treated for a minor ailment all the detailed procedure required in the more serious cases, including reference to the Care Committee, is usually gone through. . . . The first essential of any scheme for the treatment of minor ailments is that the children should be enabled to obtain treatment expeditiously.
4. The Council should consider further the existing practice in regard to the treatment of cases of discharging ears. Having regard to the fact that a certain proportion of these cases are of a serious nature, it seems desirable, with a view to ensuring adequate treatment, that facilities should be provided for an examination by an expert aural surgeon where this appears to be necessary.

Finally, the Board of Education asked the Council to consider the possibility of extending the functions of the assistant medical officers. There was a serious danger that unless more variety were introduced into the work of these officers the restriction in their duties, in practice, largely to routine medical inspection, re-examinations, and special examinations, would have an injurious influence on the work generally. At the present time the quality of the Council's staff of whole-time assistant medical officers appeared to be high. It seemed probable, however, that if the existing limitations were maintained, either the enthusiasm of the medical officers for their work would diminish, with a resultant loss of efficiency, or there would be a tendency for the medical officers to seek employment in areas where a wider scope for their activities presented itself. With a view to securing greater variety the Board suggested that in addition to carrying out the work of routine medical inspection in his district, together with re-examinations and special examinations, each assistant medical officer should be entrusted with other kinds of work, for example, the further examination of visual defects, public health work, including investigations of infectious diseases in schools, the medical inspection of children in secondary schools, scholarship candidates, etc., work in connexion with the special schools, research and laboratory work, and some share in the working of the administrative arrangements. The extension of the work of the inspection centres would tend in the same direction. The work of treating minor ailments arose naturally out of the work of the inspection centre, and could most effectively be carried on in intimate conjunction with the work of the inspection centre by the officers responsible for that work. If such an arrangement could be adopted in London it would not only widen the scope of the assistant medical officers' work but would tend to remove many of the difficulties which had arisen through the separation of medical inspection from medical treatment.

Scotland.

[*From our special correspondents.*]

Treatment of Tuberculosis.

The Chairman (Mr. James Gibson) of the Edinburgh Parish Council, at a recent meeting of that body, referring to the question of what authority should in future deal with phthisical cases, said there was an opinion held by many that the duty devolved on the public health authorities to provide accommodation for the treatment of cases of consumption. The question was rendered more acute from the fact that parishes were refusing settlements for cases now in Craiglockhart poorhouse on

the ground that the public health authorities and not the parish council should have dealt with the cases. The only way to test whether these refusals were well founded would be by an action, but, as the inspector stated in his report, the question would require to be taken up by the parish council at an early date.

At the meeting of the Midlothian County Council on July 23rd (Colonel Trotter, Convener, presiding) a letter was read from the National Insurance Committee stating that if the council waited till its sanatorium scheme was carried through there would be no provision for two or three years for cases requiring treatment under the Act. The Chairman said that it was hoped that the county sanatorium, which it was about to provide, in co-operation with other counties, would be ready earlier than the Insurance Committee suggested. Dr. Robb advised the erection of a number of shelters in the meantime, and the medical officer of health stated that six of these could be put up for about £100. It was agreed to empower Dr. Robb to expend such a sum on shelters for the benefit of insured persons and to instruct the Finance Committee to determine what the charge against the Insurance Committee should be.

The Tuberculosis Officer for Edinburgh.

At the meeting of the Edinburgh Town Council on July 29th the recommendation of the subcommittees (see JOURNAL for July 26th, p. 206) that Dr. John Guy, at present tuberculosis officer for the county of Gloucester, should be appointed assistant medical officer of health in Edinburgh, acting as tuberculosis officer, came up for discussion. The salary, it will be remembered, was to be £500 a year, but it was stated at the meeting of the Town Council that a letter had been received from Dr. Guy that morning stating that his committee had offered him a salary of £600 if he would retain his present appointment, and stating further that he was not attracted to Edinburgh by the salary merely. The Public Health Committee was unanimous in thinking that the appointment should be made at £600 and not £500. Mr. Archbold thought that this was unfair to the medical profession, for the post had been advertised at £500, and this no doubt had reduced the number of applicants. Finally, after discussion, it was agreed to recommit the matter to the committee with instructions to offer the appointment to Dr. Guy, at a salary of £600, and failing his acceptance of it to advertise for an officer at a salary of £600.

Glasgow Royal Infirmary Post-graduate Classes.

Full details of the course for graduates which, as was announced a fortnight ago, will be given at the Glasgow Royal Infirmary during September, will be found in an announcement published in our advertisement columns this week. As will be seen, the course is of the most comprehensive nature, the seventeen sets of lectures and demonstrations covering the whole field of practical medicine and surgery. It is asked that those desiring to attend will communicate at once with the Medical Superintendent, Dr. J. Maxtone Thom, who will supply any additional information desired.

Medical Treatment of School Children.

The Scottish Education Department, in a circular to school boards states that a further sum of £7,500 has been assigned for the medical treatment of school children in Scotland during the current financial year, and that it is now in a position to receive preliminary proposals from school boards able to submit a suitable scheme for dealing with the needs of their district in this particular. Applications for participation in the grant, which should be accompanied by an estimate in some detail of the cost of the scheme for the period ending February 28th, 1914, must reach the department not later than September 15th next.

Royal Edinburgh Hospital for Incurables.

The Royal Edinburgh Hospital for Incurables is a medical charity which has always received and retained a large degree of public support and sympathy. Its beneficent work is carried on mainly in the Longmore Hospital, Salisbury Place, Edinburgh, but also, of late years, in the Liberton Cottage Hospital. At the annual meeting, held on July 25th, Mr. David M. Westland, who presided, stated that 140 patients had been admitted during the year, and that the number in the hospital at the end of March was 199; the number of applications for admission was 251. The ordinary expenditure had exceeded the ordinary income by £2,000, and had to be met from extraordinary income (which for the year was £8,552). The average cost for each occupied bed was £34 10s. in the Longmore Hospital, and £51 10s. in the Liberton Cottage Hospital. Mr. Westland commented on the increase in the size of the hospital; when he joined the board, twenty-seven years ago, there were only 47 beds, and now there were 200, and yet the accommodation was insufficient, and the question of extension was becoming pressing. There would in future be fewer cases of phthisis owing to the establishment of sanatoriums in connexion with the Insurance Act, but the increase in the number of cancer cases was very alarming, and must be provided for. The Rev. Dr. John Kelman, in moving that the thanks of the meeting be given to the medical officers and managers for their services, spoke of the hospital as one of the greatest of Edinburgh institutions, and characterized the administration as humane and elastic; there was always a willingness to consider special cases not in the strictness of the letter but in the spirit of the need. Further, although it was an "incurable" hospital, he had known persons who had been sent forth able to work again.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Peamount Sanatorium.

The Committee of Management of Peamount Sanatorium met on July 26th, and amongst other business made certain medical appointments. There were seventeen candidates for the position of resident medical superintendent, nine of whom were Irishmen. All complied with the terms of the advertisements, and some had very exceptional qualifications. Dr. Allan Hanley, F.R.C.S.I., C.M.G., was unanimously elected to the position of resident medical superintendent, and Drs. Thomas R. Elliott and T. P. O'Reilly, assistant resident medical officers.

Vaccination Statistics.

The Registrar-General has issued a Supplement to the Quarterly Returns of the Marriages, Births, and Deaths registered in Ireland during the year 1911. It deals with the statistics regarding the vaccination of children whose births were registered in Ireland in that year; they numbered 101,758, and of them 73,856 were returned as having been successfully vaccinated; in the cases of 2,990 vaccination was postponed, and 151 were returned as vaccinated unsuccessfully on the ground of constitutional insusceptibility to the vaccine disease; 6,434 died before vaccination; 4,518 were returned as unaccounted for owing to removal from the district or other reason; and 13,808 were reported as defaulters. When expressed in percentages it appears that 72.6 per cent. of the total were reported as successfully vaccinated; that in 2.9 per cent. vaccination was postponed on account of the children being unfit for vaccination; that 0.2 per cent. were insusceptible of vaccination; that 6.3 per cent. died before they were vaccinated; that 4.4 per cent. were unaccounted for owing to removal from the district or otherwise; and that 13.6 per cent. were returned as defaulters. Particulars are given in a table regarding the vaccination of the children registered during each of the eight years 1904–11, with the percentage to the total births registered in each year. The successful cases of vaccination amounted to 61.0 per cent. of the total births registered in the province of Leinster, to 70.2 per cent. in Munster, to 82.6 per cent. in Ulster, and to 72.3 per cent. in Connaught.

Detailed information regarding vaccinations for the counties, superintendent registrars' districts, and registrars' districts is given, together with extracts from the notes presented by the registrars.

A table is given showing the number of deaths from small-pox in Ireland in each of the years 1864–1911. The last death from small-pox in Ireland occurred in the year 1907, when one death was registered.

Special Correspondence.

PARIS.

Bradycardia; Recurrent Volvulus; Radium Treatment of Myelogenous Leukaemia.—Foreign Medical Men in France.—Notification of Phthisis.—Appendicitis and Sciatica.

AT a recent meeting of the Society of Biology Drs. Bellois and Dubois reported the results of some investigations conducted by them into the action of certain drugs in cases of bradycardia. Among them was amyl nitrite, and as the results of their experiments therewith they came to the conclusion that this drug has a more marked and more constant action on the vagus than has atropine. Their subjects numbered thirty-one, and atropine increased the radial pulse by ten beats per minute against twenty in the case of amyl nitrite. The authors also experimented with digitalis, the work done including the neutralization of its action on the vagus by the use of amyl nitrite. Despite such neutralization, the rapidity of the heart beat diminished, the authors consequently inferring that the ordinary action of digitalis is due not alone to stimulation of the vagus, but also to the direct action of the drug on the heart muscle. At the Society of Surgery was read a communication from Dr. Vignier in regard to 27 cases of volvulus, in 13 of which recurrences took place. In his opinion the proper treatment of cases of volvulus lay not in merely untwisting the gut, but also in resecting it. In several cases in which simple detorsion had been employed the volvulus recurred, and was accompanied by gangrene, haemorrhage, and other dangerous phenomena. Hartmann at the same meeting related a case in which volvulus recurred three times within five and a half years. Such incidents, he believed, were most commonly observed in connexion with the sigmoid flexure. The treatment of myelogenous leukaemia by radium was the subject of a communication at a recent meeting of the Academy of Medicine by Dr. Renour. He reported five cases in which success had been obtained, two of these having previously been treated by *x* rays without improvement. The radium treatment employed by him consisted in keeping a radium applicator containing 35 cg. of radium sulphate over the enlarged spleen for twenty-four hours. After repeating this application three or four times he found that the spleen had returned to its normal size and that the blood count revealed the ordinary constitution of live blood.

The French Medical League has again had under consideration the question of the conditions under which permission to practise in France is accorded to foreign medical men. No great objection was taken to the regulations now applying to the granting of medical degrees to foreign subjects, but stress was laid on the fact that the French medical student suffers the disadvantage of having to serve for two years as a soldier, and the discussion ended in the adoption of a proposal to the effect that in future foreign medical men should be prohibited from practising in France at all.

After many discussions on the subject the Academy of Medicine had at length resolved to recommend that cases of tuberculosis in an active state shall in future be included among diseases which are compulsorily notifiable. The decision, however, was by no means unanimous, the votes in favour of the suggestion only outnumbering those against it by seventeen. The chief argument on which the opposition depended was the desirability of not infringing the code regarding professional secrecy and the known fact that among the French public the desire to conceal the existence of tuberculosis in their families is always keen. The first resolution stated "that it is to the public interest and welfare that all active cases of tuberculosis shall be notified," and the following motion, which was also carried, stated that "the notification should be made to a medical officer of health, who in dealing with it should conform to the ordinary rules of professional secrecy and arrange privately for the carrying out of the necessary prophylactic measures."

Drs. Enriquez and Gutmann, speaking at a meeting of the Medical Society of Hospitals, have drawn attention to several cases of appendicitis in which the predominant symptoms suggested sciatica. Some of them had actually been treated as cases of sciatica, but on radioscopic examination proved to be cases of appendicitis in which the caecum was unusually low down in the pelvis. The *x* rays were applied, with the patient in the Tredelenburg position. Three of the cases were submitted to operation and the appendix found to be bound down posteriorly to the fascia of the pelvic cavity, and after operation the sciatica phenomena disappeared entirely.

Correspondence.

THE PROPHYLAXIS OF VENEREAL DISEASE.

SIR,—For various reasons it is doubtful if the Government will appoint a Royal Commission to inquire into the prevalence of syphilis and the steps to be taken to limit its ravages. But if the Government would provide half the cost of the maintenance of laboratories for the examination of specimens of blood from doubtful cases submitted by medical men, in the course of a few years we should have exact knowledge on an extremely difficult subject, the medical profession and the public would be educated far beyond what they are at present, and we should have a scientific foundation for the suggested Royal Commission to work on.

The cost of carrying out such laboratory investigations should not exceed £1 per annum per 1,000 of population. The County Councils and County Borough Councils are already paying for such laboratory investigations in the case of diphtheria, enteric fever, and tuberculosis (in the latter case, thanks to the Insurance Act, the Government pays part of the cost), and if the Government would bear half the cost of laboratory tests for syphilis I am sure the local authorities would not be slow to find the other half.

At the present time the cost of such investigations is prohibitive when undertaken in private laboratories, and the result is that very few are made. If the work were carried out free of charge to medical men in the laboratories already working for the local authorities, large numbers of specimens would be submitted, and in a little time it would be a condition of accepting an appointment in any of the public services that the blood test should prove freedom from taint. The insurance companies would insist on such examinations, and the *élite* of the population would form themselves into a society among whom marriage would be impossible without the blood-test proof, and gradually public opinion would be formed for giving effect to such recommendations as a Royal Commission might make.—I am, etc.,

SIDNEY BARWISE,
July 25th. Medical Officer of Health, Derbyshier.

HERBALISTS AND THE INSURANCE ACT.

SIR,—The Worcester City Insurance Committee has according to a report in the JOURNAL for July 12th, made, arrangements to permit certain insured persons to contract out for the purpose of being attended by a herbalist. As this procedure may possibly be adopted by other committees, it may be as well to point out that the Medical Act of 1858 still remains unrepealed, and that, under its penal provisions, any unregistered person who signs a certificate required by any Act then "in force or that hereafter be passed" is liable to a penalty under Section 40 for thereby pretending to be a registered medical practitioner. Proceedings have been instituted successfully in this respect, both under the Medical and Dental Acts. Should, therefore, any herbalist sign any such certificate required for the purposes of the National Health Insurance Act for an insured person, and the evidence of such be placed before the Medical Defence Union, it will be my duty, as well as a pleasure, to advise the Council to take action and summon the offender and claim the full penalty. The so-called Herbalist Act, as I have often pointed out before, does not permit these persons to practise for gain. In addition, should the herbalist not only prescribe for insured persons suffering from a medical, as opposed to surgical, ailment and in addition dispense medicines for the same, there would be an infringement of the Apothecaries Act.

I am sure that, were such cases of infringement brought before the Apothecaries' Society with legal evidence, that authority would institute proceedings in the county court without hesitation. It cannot too often be recalled that the Insurance Act neither diminishes nor extends the existing laws relating to medical practice, and that Local Insurance Committees cannot, however powerful, override the law.—I am, etc.,

A. GEORGE BATEMAN.

Medical Defence Union, 4, Trafalgar Square, W.C., July 28th.

THE FORM AND POSITION OF THE STOMACH.

SIR,—"And what is the shape of a milk pudding?" should I ask in return. The shape of the mould it is in, and I contend that it is the same with the stomach, only in this case it is on its contents that it moulds itself. Then we must remember that *x* rays generally teach us what is the shape of a stomach with a bismuth meal inside.

Dr. Haddon, in his letter under the same title, tells us how to advise our patients when inconvenienced by gas in the stomach. But, first of all, do not put any gas in. Nearly always this gas, as shown by analysis, is merely air—nitrogen 80 per cent.—swallowed unknowingly with the saliva when a dyspeptic patient gets into the habit of making unnecessary deglutition movements after meals.

As regards the body position, I would advise lying down flat on the stomach in order to let the gas escape freely, just as nurses do with infants under similar circumstances.

To prescribe food that does not generate gas is merely one way of making the diagnosis of aërophagia. In most cases the trouble persists. If so, we are sure that the gas is being swallowed, and experimental proof is to be given by the screen when it is noticeable that the stomach assumes the shape of a mushroom with a dark stem and a clear head, bulging more and more when air is continued to be swallowed.

Total prohibition of drink! That seems very hard on us poor spa practitioners, whose everyday experience proves the excellency of the reverse method. But still I feel we are all greatly indebted to Dr. Haddon, who has impressed upon us the urgent necessity of learning the threefold lesson—*when*, *how*, and *what* to drink.—I am, etc.,

GUSTAVE MONOD, M.R.C.P.Lond., M.D.Paris.

Vichy, July 22nd.

DENTISTRY IN THE UNIVERSITY OF LONDON.

SIR,—May I be permitted to reply to some points in the leader in your JOURNAL of July 19th? By far the strongest argument adduced against the M.S. Branch 2 is that so far no one has presented himself for the degree, but the value of this argument is considerably discounted when it is remembered that there has not been time for any one to do so. It is not to be supposed that intending dentists would attempt the London University career until it had become known amongst dental students that such a degree existed, and sufficient time had elapsed for the degree to be obtained.

The D.Sc. degree existed for many years before any candidate appeared, and even now very few present themselves; yet there has been no recommendation that the D.Sc. should be abolished.

The approach to the M.S. by branch channels brings that degree into line with the M.D. of the same University. The only sensible course would be to establish more branches for other specialities of surgery, not to destroy the only existing one.

At present a specialist in the ear or the eye or the throat cannot show any certificate from his University of special training, or special knowledge. Beyond his general qualification the world has only his own word for his special qualifications. He has never been specially examined. Dentistry alone in surgery offers such a certificate.

The effect on dental education of the present M.S. degree will be the same as the effect of any other high honour in any other educational course—namely, to raise its tone all round.

The establishment of the degree was the outcome of years of consideration by those whose lives have been spent in guiding dental education. It was recommended by a full meeting of the Board of Studies in Dentistry with one dissentient. The chairman, and four at least of the members of the Board, had been examiners in dental surgery at the Royal College of Surgeons. The Chairman of the Board was the Chairman of the Examining Board. It passed the Faculty of Medicine with only two dissentients, and the Academic Council and Senate approved it by large majorities.

Is it not possible that these gentlemen were better able to form judgement than seven gentlemen and one lady who "came fresh to the subject," free from bias certainly, but also entirely free from knowledge? Surely it is better to be an expert than to learn from experts.

The suggestion that a degree in dentistry, not including the M.B., B.S. as a preliminary, would meet the requirements of the case should only be supported by those who believe the teeth not to be a part of the human body, or that their connexion with the vascular and nervous and alimentary systems does not involve any but trivial issues. The critics of the degree have forgotten that the issues that lie before the dental surgeon are often issues of life and death. If any serious attempt is made to reconsider the question it is to be hoped the University will first hear the views of those who have really studied the question, and whose aim it is to raise the status of this branch of surgery, and that the authorities will not allow themselves to be misled by the small band of medical and dental experts whose ambition it seems to be to degrade this branch of surgery into one of the trades.

Lastly, the University must remember that it lies under obligations to those young men who have already embarked upon this costly and difficult curriculum on the strength of the good faith of the University itself. It is too late now to say that all their expert advisers were wrong; to say nothing of its being a little undignified.—I am, etc.,

London, W., July 22nd. ARTHUR S. UNDERWOOD.

SYMPHYSIOTOMY IN PELVIC OPERATIONS.

SIR,—I have been for some time working on the subject of enlarging deformed pelves by permanently keeping the divided rami apart by bone grafts, and in operating lately on a patient with a sessile fibroid of the uterus, firmly fixed in the true pelvis, I had so little room that I could not reach the uterine arteries, and divided the symphysis.

I was astonished to find how easy extirpation then became. I have not seen symphysiotomy for such cases suggested in gynaecological literature that has come under my notice.

The after-healing was normal, and when the patient got up in the fourth week the symphysis appeared quite firm. The extra room is got where retractors and larger skin incisions are useless, and though such difficulty as I met with rarely presents, the slight extra risk of dividing the symphysis might be borne in mind in similar cases.—I am, etc.,

Dundee, July 22nd. ALEXANDER DON.

LEGISLATION FOR INEBRIATES.

SIR,—Those of us who make the study and treatment of alcohol and drug inebriety our special work have to thank you for the two articles in last week's issue of the JOURNAL on "The Inebriates Acts" and "The Treatment of Inebriety." That there is a crying need for further legislation enabling alcohol and drug inebriates to be adequately dealt with is only too obvious to us, when out of every hundred inquiries and applications that reach us as to the admission of patients for sanatorium treatment not more than say 20 or, at most, 30 per cent., of such applications actually result in admissions, and when we know that every one of the persons on whose behalf such applications are made is in urgent need of immediate and adequate treatment. It is obvious to all those who have any large experience of inebriates that to refrain from legislation compelling them to place themselves, or enabling their friends to place them, under treatment, on the ground that such legislation is undue interference with the liberty of the subject or is grandmotherly legislation, is an absurdity. The inebriate is (temporarily at least) not a fit and proper person to be allowed full liberty of action, nor is he capable of judging

what line of action is best for his own interests, so long as he remains under the influence of the drug to which he has fallen a victim, and often for a considerable time longer. Want of such compulsory legislation results in his postponing treatment till it is useless and in the ruination of himself and those dependent upon him. The bill now before Parliament—the tardy result of an exhaustive inquiry made *four years ago*—while safeguarding the inebriate in every conceivable way, will, if passed in its present form, go far to set matters right in this direction, and bring the alcohol and drug inebriate under adequate treatment at a time when he is curable, instead of leaving him, as now, to his own devices or to be victimized by the vendors of the "secret remedies" and "drink cures" so continuously and largely advertised, until a curable condition becomes an incurable one. It is to the medical profession the public must look for advice in the treatment of inebriety; it is at the urgent call of the medical profession that adequate legislation will be forthcoming, and there is still far too much apathy and want of knowledge shown by the profession with regard to inebriety, its prevention, and its cure.—I am, etc.,

J. W. Astley Cooper,
Medical Superintendent Ghyllwoods Sanatorium,
July 22nd. near Cockermouth, Cumberland.

THE TREATMENT OF PNEUMONIA.

Sir,—Dr. Arnold's letter brings the following to mind: In the winter of 1864, when a second-year student at the Queen's College, Cork, I called to see a relation, and found him ill in bed. The family doctor, the late Dr. Sandham, who was a man well advanced in life, had been sent for and arrived while I was in the sick room. He made a very careful examination of his patient, and having diagnosed the case, drew my attention to the initiatory chill, the headache, the dry intense heat of skin (thermometers were not then in use), the rusty sputum, then to the hurried respiration, the dullness on percussion, and the crepitant breathing sounds. Having written his prescription, he handed it to me. I found the following: ℞ Quininae sulph. gr. ij, pil. hydrarg. gr. j, pulv. opii gr. ¼, pulv. ipecac. gr. ½, ext. hyoscyami q.s. Ut fiat pil. j; mitte tales viij; cap. pil. j 4tis horis. A mixture composed of ℞ Liq. ammon. acet. ʒ iij, sp. aether. nitrosi ʒ iij, aq. camphorae ad ʒ viij. Cap. ʒ j 4tis horis.

About a week after I called again and found the patient much better, but suffering from the effects of a fly blister which had been prescribed to "clear away the ashes of the fire that had been alight in the lung."

For many years I have regarded quinine as the sheet anchor in the treatment of acute toxic conditions, including pneumonia, and in the latter, if there be any delay in complete resolution, I never hesitate to apply the fly blister to clear away "the ashes of the fire that had been alight in the lung."

I have lately used the salicylate of quinine in 5-grain doses every three or four hours for adults and have been pleased with the results.

Dr. Arnold deserves our thanks for his very useful letter.—I am, etc.,

Manchester, July 21st. William Bennett, M.D.

THE TREATMENT OF NEURASTHENIA.

Sir,—If we reduce the discussion of the pathology and treatment of neurasthenia to its simplest expression it may be defined as chronic toxaemia. What is the usual history of a case? Work and worry have led a person to some state of slight nervous irritability and instability. Digestion, both stomachal and intestinal, is imperfect and intestinal putrefaction becomes the order of the day, as shown by the frequent existence of oxaluria, indicanuria, and scatoluria. The tissues in general, the nervous system in particular, are bathed and fed by blood full of imperfectly elaborated nutritive substances and toxins from decomposed foodstuffs in the intestines. As a result of this, the sufferer feels depressed and exhausted—he eats more and digests less, increasing the state of auto-intoxication. Then kind friends or unscientific doctors prescribe alcohol, caffeine, kola, beef juice, phosphates, lecithin, and innumerable preparations of medicated wines, patent foods, and other vile concoctions, which the patient gulps down, always hoping to "strengthen his nerves." The toxaemic condition is increased, the stomach and intestines finally strike, and the patient loses flesh, as his nervous and general system is starved of proper nourishment, but fed on toxic substances.

Whether we adopt the one meal a day, or whether we follow Dr. Haig, it simply means we suit the quantity and quality of the diet to the manipulation of the still remaining remnants of digestive functions. But, above all, we have eliminated the poisonous compounds of medicated wines and commercially successful messes called patent foods.

On account of the chronic toxaemia blood pressure first rises by arterial and capillary spasm and overworked kidneys, but later falls, as the heart muscle begins to fail.

This dieting and attention to the alimentary canal is sometimes sufficient to cure an attack of neurasthenia, but to be sure of success additional interference is necessary.

In my own practice the next thing to do is to lixiviate and wash out of the tissues the stored-up toxic substances that the cells, saturated with them in proportion to the blood saturation of the same substances, have to retain. For this purpose I find a cure at Vittel the most effective.

Finally I restimulate healthy nutrition by an arsenical compound, which I usually prefer in the form of intramuscular injections of cacodylate or sodium methylarsenate, so as to drug the stomach as little as possible. Of course in each individual case every offending function that is a collateral aid to the neurasthenia must be attended to and corrected.

If this common-sense line of treatment is carried out I will guarantee a cure in practically every case, with such success as I have had with many dozens of patients, who are now strong, healthy men and women with a stable nervous system.—I am, etc.,

Vittel, France, July 23rd. H. J. Johnston-Lavis.

Sir,—No one can give Dr. Haig greater credit than I do for the good he has done as a vegetarian physician, in spite of what I believe to be an erroneous theory. I am no theorist, and can believe in no theory which is not the outcome, as it were, of facts. I have, however, formed a theory of disease, which, after looking through the history of medicine, I believe to be new, and which I hope I may live to enunciate and support with facts observed by myself, so that I can be sure of their accuracy. Meantime as to one meal a day being safe, there are a few facts which may remove any fear of "vanishing away," as Dr. Haig fears I may on one meal. Thus, Cornaro lived on 12 oz. of food and 14 oz. of wine. He might have eaten that all at once without overburdening his stomach, but he divided it, and did not adhere to one meal. I have as an acquaintance a man who lives on 16 oz. of food in the day, and he is a vegetarian. I asked him why he did not make one meal of it, and he said it was to increase the number of his pleasures. Solis, an Austrian, whose case was reported upon by a medical committee in 1878, when he was 180 years of age, lived upon one meal, took all his food cold, ate butcher meat only twice a week, and fasted from all food two days each month. He lived five years after being examined by the medical committee. These, however, are comparatively modern instances. If we go back to Greek and Roman times, we find that they had no idea of eating so often as we now do. The Romans when they conquered the world ate only once a day, and Hippocrates writes of those who live on one meal a day, being ill if they ate twice, so that eating is a habit which may be a bad as well as a good one, if too much indulged in. In all my experience I have never seen a patient suffer from eating too little, and I have never spoken to a doctor on the subject who has not admitted that many eat too much, but the doctors will not admit that they themselves eat too much, although they all do, for the body requires much less than is generally supposed. I met a man who had lived for three years, eating only one slice of white loaf, with a cup of tea at 5 p.m., in the twenty-four hours. He was a light porter, and weighed only 8 st. in his clothes. Such a fact is staggering, but Cornaro was laid up with a fever, which lasted thirty-five days, by adding 2 oz. to his usual quantity, at the urgent solicitation of his friends.—I am, etc.,

Hawick, July 19th. John Haddon, M.D.

THE "MEDICAL DIRECTORY."

SIR,—The annual circular for the *Medical Directory* will be posted to the members of the medical profession on the 31st inst. If by any chance the circular is not received within a few days of the date of posting, we shall be pleased to forward a copy on request.

We trust that all practitioners will make their returns to us promptly, in order that the entries may be as accurate and up to date as possible.

The *Directory* will, as usual, be published a few days before Christmas, and to this end we ask for the co-operation of the profession.—We are, etc.,

J. AND A. CHURCHILL.

7, Great Marlborough Street, W., July 25th.

INTERNATIONAL MEDICAL CONGRESS.

Subsection of Anaesthesia.

THE address of Dr. Dudley Buxton, President of the Subsection of Anaesthesia of the International Medical Congress, appended to the letter which appeared in the JOURNAL of July 26th, p. 208, should have been *58*, New Cavendish Street, W., not *53*, as printed.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

SECOND M.B. (*Part I*): J. S. Alexander, Mary N. Andrews, K. D. Atteridge, R. T. Bailey, G. E. Barker, G. C. Berg, J. A. Binning, C. V. Boland, Margaret S. G. Bott, *C. H. C. Byrne, L. A. Celestin, A. W. Cocking, R. C. Cooke, S. A. Cornelius, W. M. Crombie, A. R. Dingley, R. O. Eades, *E. H. Eastwood, C. Y. Eccles, W. J. Evans, V. Feldman, R. K. Ford, P. C. Gibson, M. H. Hassan, G. E. Heath, G. O. Hempson, N. H. Hill, H. M. Holt, W. A. Hotson, *G. P. B. Huddy, Edith C. Hudgell, H. L. G. Hughes, R. P. Langford-Jones, F. R. Law, R. H. Leigh, H. Lewis, K. T. Limbery, W. H. Lloyd, W. F. MacAlevey, P. G. McEvedy, M. Mackenzie, D. M. MacManus, G. A. S. Madgwick, F. Molina, J. K. Muir, Doris M. Pearce, G. J. Randell, D. Rees.

M.D.—*Branch I (Medicine)*: A. D. E. Bayliss, T. K. Boney, A. Burrows, A. N. Cox, G. S. Earl, A. B. Fearnley, H. P. Hacker, C. H. Johnston, E. J. G. Jones, D. Kennedy, W. J. O'Donovan, Ellen M. Pickard, †C. McM. Wilson. *Branch III (Mental Diseases and Psychology)*: J. A. Perdrau. *Branch IV (Midwifery and Diseases of Women)*: A. C. S. Coutts, S. Forsdike, A. W. Jones, Mary E. Morris. *Branch V (State Medicine)*: N. H. Walker. *Branch VI (Tropical Medicine)*: C. N. Davis.

M.S.—*Branch I (Surgery)*: G. Jefferson (University medal), T. D. M. Stout, J. O. D. Wade, ‡C. H. S. Webb.

*Passed with distinction in Anatomy. †Awarded a University medal. ‡Qualified for a University medal.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examination indicated:

FIRST COLLEGE (*Part I, Chemistry, and Part II, Physics*).—R. G. Addenbrooke, †W. B. S. Andrew, G. A. A. Bradnack, C. H. Carroll, N. Chena, *H. C. Clifford-Smith, J. R. Cox, A. R. Crane, †Jane Crawford, †B. O. Dewes, *H. S. Drabble, G. H. Duffield, *R. Erskine-Gray, F. K. Escritt, W. B. Farrington, †N. E. Fusken, †E. F. Gillett, †H. A. Hathout, *F. H. Hyland, *M. Ibrahim, Evelyn H. Johnson, *Lillian Lowenstein, †C. H. Macklin, *R. K. Marwood, W. H. Maudling, †H. Morris-Jones, K. R. O'Brien, A. Pain, R. E. Rampling, †P. Randall, Florence M. Rhodes, A. H. Richardson, G. Rooker, *K. J. Rustomjee, *A. H. Samy, H. L. Slaughter, R. M. Somerset, S. W. Southwood, J. A. Stephens, T. N. Strange, A. H. Talaat, J. N. Terry, †D. R. Thomas, G. McK. Thomas, †I. M. Thomson, F. E. G. Watson, †G. A. O. White, D. F. Wilson. (*Part III, Elementary Biology*)—R. G. Addenbrooke, N. J. Ainsworth, H. C. Apperley, H. Barlow, O. Bastable, F. Blake, J. R. Cox, F. W. Crook, E. F. Gillett, P. Green, F. J. Harrington, M. W. M. Hassanally, A. G. Hewer, J. R. Houghton, T. G. James, M. Khalil, Lillian Lowenstein, A. Y. Massouda, G. Millar, J. W. W. Newsome, A. Pain, M. L. Quinlivan-Bulger, P. Randall, Florence M. Rhodes, K. J. Rustomjee, H. M. Savery, J. A. Stephens, Phyllis Stevens, T. N. Strange, F. H. Stutterford, T. F. Thomas, F. F. Wheeler, G. A. O. White.

* Passed in Part I only. † Passed in Part II only.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST FELLOWSHIP.—R. G. Blair, H. C. Carden, J. A. Fretton, H. Graham, Mary E. Henry, G. T. Hingorani, J. B. Magennis, H. Ross, Captain, I.M.S., J. Suares, W. C. P. Smyly.

FINAL FELLOWSHIP.—J. L. Lunham, Captain, I.M.S., M. McGrath, W. G. Ridgway, W. R. Watson.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

D.P.H. (*Both Parts*).—*Miss Ma Saw Sa, F. Conceicao, E. P. Ghose, Miss Singcha Hoashoo, F. Keane, C. E. McNaught, R. L. Williams.

* Honours.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

THE ANTARCTIC EXPEDITION.

THE silver Polar medal, inscribed "Antarctic, 1910-1913," has been granted to Surgeon George Murray Levick, R.N., and Surgeon Edward L. Atkinson, R.N., of the British Antarctic Expedition, 1910. The silver clasp, which is awarded to those who already possess the silver Polar medal, was granted to the late Dr. Edward A. Wilson.

ROYAL ARMY MEDICAL CORPS.

RESULTS OF COMPETITIVE EXAMINATION.

THE following were the successful candidates for commissions in the Royal Army Medical Corps at the recent competition held in London for which twenty-one candidates entered:

E. W. Wade ...	University College, Bristol ...	562
B. Woodhouse ...	University College Hospital ...	562
W. K. Morrison ...	Edinburgh University	554
E. Percival... ...	Edinburgh University	551
H. C. D. Rankin ...	Glasgow University	550

INDIAN MEDICAL SERVICE.

THE result of the July examination was announced on July 26th, 1913. There were 33 candidates, the first 12 being admitted as lieutenants on probation with effect from July 26th, 1913.

The names of the successful candidates with the marks obtained by each out of a possible total of 5,100 are given below, together with their degrees and medical schools:

Name.	Degrees, etc.	Medical School.	Marks.
S. S. Sokhey ...	M.B., Ch.B.Edin., M.A., B.Sc.	Punjab University, Edinburgh University	3,517
A. K. Sinha ...	M.B.Calcutta, M.R.C.S., L.R.C.P., D.T.M. and H. Cantab.	London Hospital Calcutta Medical College, London Hospital	3,392
S. Dorais Amy ...	M.R.C.S., L.R.C.P.	Madras Medical College, Middlesex Hospital	3,198
J. Findlay... ...	M.B., Ch.B.Glasg. M.A.	Glasgow University	3,167
A. Seddon	M.B., Ch.B.Liverp.	Liverpool University, London Hospital	3,146
J. C. De	M.B.Calcutta, M.R.C.S., L.R.C.P.	Calcutta Medical College, London Hospital	3,072
W. C. Spackman	M.B., B S.Lond., M.R.C.S., L.R.C.P.	Birmingham University, St Bartholomew's Hospital	3,061
N. M. Mehta ...	L.M. and S.Bombay, M.R.C.S., L.R.C.P.	Grant Medical College, Bombay, Middlesex Hospital, London Hospital	3,039
C. H. P. Allen ...	M.R.C.S., L.R.C.P.	Madras Medical College, University College Hospital	2,957
P. S. B. Langton...	M.R.C.S., L.R.C.P.	Middlesex Hospital	2,943
R. M. Easton ...	M.B., Ch.B.Aber., M.A.Aber.	Aberdeen University, Aberdeen Royal Infirmary	2,893
R. V. Martin ...	L.M.S.S.A., M.R.C.S., L.R.C.P.	St. Mary's Hospital	2,878

Medical News.

THE twelfth international Congress of Ophthalmology will be held in St. Petersburg in August (10th to 15th), 1914.

THE General Federation of Belgian Midwives has held its first congress on July 26th, 27th, and 28th, at Ghent. Five hundred members were present.

PROFESSOR E. C. HANSEN, of Copenhagen, has founded a prize consisting of a gold medal and a sum of at least 2,000 kroner to be awarded every two or three years to the author of a work on microbiology published in Denmark or any other country.

THE fourteenth series of the Lane medical lectures will be given by Sir Edward Schäfer in Lane Hall of Stanford University Medical Department, San Francisco, on September 3rd, 4th, 5th, 8th, and 9th. The subject of the lectures will be the function of the ductless glands, especially in relation to other secreting organs.

ALTHOUGH next Monday is Bank Holiday, the Council of the Royal College of Surgeons intends to keep its museum open on that day, and also its library, for the convenience of visitors to the International Congress. The library will also be open on Tuesday and the museum during the whole of the week.

ON July 24th a company representative of the honorary medical staff, former residents, clinical assistants, nursing staff, household, and friends met at 129, Harley Street in order to honour Dr. J. W. Linnell, the late medical superintendent of the Hampstead branch of the Mount Vernon Hospital. Dr. F. W. Tunnicliffe, as chairman, then presented Dr. Linnell with a gold watch and chain. In a few telling words he expressed the sincere appreciation of all those who had been associated with Dr. Linnell during his tenure of office at Hampstead, and their deep regret at his departure. He commented upon his accurate observations as a clinician and touched upon his charm of personality and wealth of humour. The watch, to the cost of which the honorary medical staff had mainly contributed, was most beautifully inscribed to that effect. The chain was presented mainly by the past and present matrons, chaplains, residents, nurses, and household. After brief speeches by Drs. Latham and Price, both warmly eulogistic in tone, Dr. Linnell accepted the gift, and in a few words expressed his gratitude and regret at severing his connexion with Mount Vernon Hospital. The meeting broke up after passing a vote of thanks to Mrs. Tunnicliffe as hostess.

KING'S COLLEGE HOSPITAL, which first opened its doors some seventy years ago, closed them, as we duly noted in an article on "Hospital Distribution in London," so far as its old habitation in Portugal Street is concerned, on July 14th. Its new buildings at Denmark Hill are, however, now so far complete that, though they will not be utilized for the reception of patients until next October, they were visited by the King and Queen on July 26th and duly declared open. The grounds extend to some 12 acres, and the building, which occupies a parallelogram having a length of 1,000 ft. by a breadth of 500 ft., has the further advantage of overlooking Ruskin Park. The foundation stone was laid in July just four years ago by King Edward VII, and in connexion with the annual meeting in 1910 we gave a full account of the plans which were in view, and also a ground plan (1910, vol. ii, p. 91). Hence it is sufficient now to state that the 600 beds which eventually will be provided will be contained in eight parallel ward blocks, connected together by a corridor nearly 900 ft. in length. Five of these blocks are already in place. There is also a chapel, to which the stained glass windows of the old chapel in Portugal Street have been removed. The material employed is yellow brick, picked out with red brick and Portland stone. The site was presented by the Hon. W. F. D. Smith, the chairman of the hospital, and the total expenditure anticipated is about £520,000, of which £150,000 still remain to be collected. The ceremony on Saturday included the presentation to their Majesties of the senior physician, Dr. Tirard, and the senior surgeon, Sir Watson Cheyne.

AT the Holborn Restaurant on Thursday, July 17th, Dr. R. M. Beaton was entertained at dinner by the members of the Executive Committee of the St. Pancras and Islington Divisions of the British Medical Association and of the Provisional Medical Committees of both these metropolitan boroughs. The purpose of the gathering was to signify in some measure the appreciation of the practitioners in that area of the great services Dr. Beaton has rendered to the profession in many capacities, and specially to signalize his term of chairmanship in the Division during the past year. On the same occasion Dr. Beaton was presented with a silver tea service, tray, and silver cigarette box, subscribed for by a large number of practitioners in the Division. Dr. Rattaby, in proposing the toast of the evening, said he had known Dr. Beaton for thirty years, and had, in fact, been born in the same parish. Dr. Beaton was fortunate in having been able to retire from practice sooner than fell to the lot of most men, and the leisure he had thus obtained had been dedicated to the service of his fellow-citizens. He had served on the Borough Council of St. Pancras, on the London County Council, of the Public Health Committee, of which he had been chairman, and was now a member of the Metropolitan Water Board. In consequence he had come to the Division exceptionally well prepared to help it in its time of trial. As Chairman of the Division he had been regular, generous, and impartial, and had succeeded in keeping its many difficult meetings entirely in hand. He had worked very hard, and inspired others to do the same; the result was that the organization of the Division and its loyalty to the policy of the Association were second to none. He begged Dr. Beaton to accept as a mark of great esteem the gift which his fellow-practitioners have so willingly subscribed to. The toast was accorded musical honours, and after other speakers had supported the chairman in his remarks Dr. Beaton responded.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

FEES FOR EXAMINATION OF STAFF.

G. M. M. asks what fee he should charge for examining for a large firm the members of its permanent staff on engagement. The examination is to include the examination of the urine, and in the case of candidates who apply to our correspondent's surgery a description of the man's appearance to prevent personation.

*** Public bodies often require such examinations before taking on permanent employees, and the Shoreditch Borough Council pays half a guinea for this work.

ANSWERS.

THE CUPRASE TREATMENT OF CANCER.

DR. THOMAS WM. RICE (Portarlington) writes: In answer to "H. F. W.," I have a patient at present suffering from a recurrence of cancer in the subclavian region pressing on the subclavian vein and causing great swelling of the arm; the case is unfit for further operation (except to amputate the arm). I have given her eight injections (the contents of one box) of Dr. Gaube du Gers's cuprase. I gave one ampoule with an ordinary serum syringe deep into the muscles of the buttock once every week; every caution was observed as to sterilizing both skin and syringe. I did not use cocaine or other local anaesthetic. There was no bad after-effect from any of the injections, and practically no pain; the patient was able to go about immediately after. The treatment has done no good—so far, but the trouble did not increase during the treatment. On referring to *Green's Encyclopaedia of Medicine and Surgery*, vol. vi, p. 207, the latest statistics of cures, when treated *early* by modern surgical operation, is given at 41.2 per cent., a great difference from the experience of Sir James Paget, who stated that in his own practice he did not know of a single case of cure, or of Billroth's statistics, the best up to that date, who gave a percentage of 4.7 cures in 143 cases operated upon between 1867 and 1876.

LETTERS, NOTES, ETC.

THE METRIC SYSTEM.

MESSRS. BURROUGHS WELLCOME AND CO. (London) write: Our attention has been called by a medical man to the communication of Dr. J. W. Lindsay, entitled "Metric System," on page 212 of the JOURNAL of July 26th. He asked us whether it was a fact that we issued "tabloid" atropine sulphate, ½ grain, as he could not trace this strength in our printed matter, and he referred us to Dr. Lindsay's letter, where apparently the expression "dose" is used in the sense of "strength." Dr. Lindsay's intention was, we think, to draw attention to the error made by the chemist in stating that half a milligram was equal to half a grain. Unfortunately the paragraph can be read in two ways, the second interpretation being that we make "tabloid" atropine sulphate of the strength of ½ grain. The fact is that for administration by the mouth "tabloid" atropine sulphate is issued of a strength of 0.0005 gram (grain $\frac{1}{120}$), and it is our practice to state both metric and imperial strengths side by side in our price list and on our labels. For hypodermic use "tabloid" atropine sulphate is issued of five strengths, respectively grain $\frac{1}{250}$, $\frac{1}{100}$, $\frac{1}{50}$, and 0.0005 and 0.001 gram.

THE ARTIFICIAL RIPENING OF ORANGES.

DR. JAMES OLIVER (London, W.) writes that oranges are now gathered in an immature and green state, and are caused rapidly to assume a yellow colour and present the appearance of fruit which has matured and ripened more gradually and more naturally by placing them in closed rooms which are heated by stoves bearing open vessels of water; the fruit is subjected for four or five days to a temperature maintained at about 95°. Autolytic changes take place in oranges thus sweated, which render them less wholesome and less fit for human consumption. In itself the process of sweating may seem innocent enough, but it is, Dr. Oliver thinks, one more indication of the way in which our foodstuffs are being tampered with, and of the way in which scientific knowledge is being utilized to our detriment.